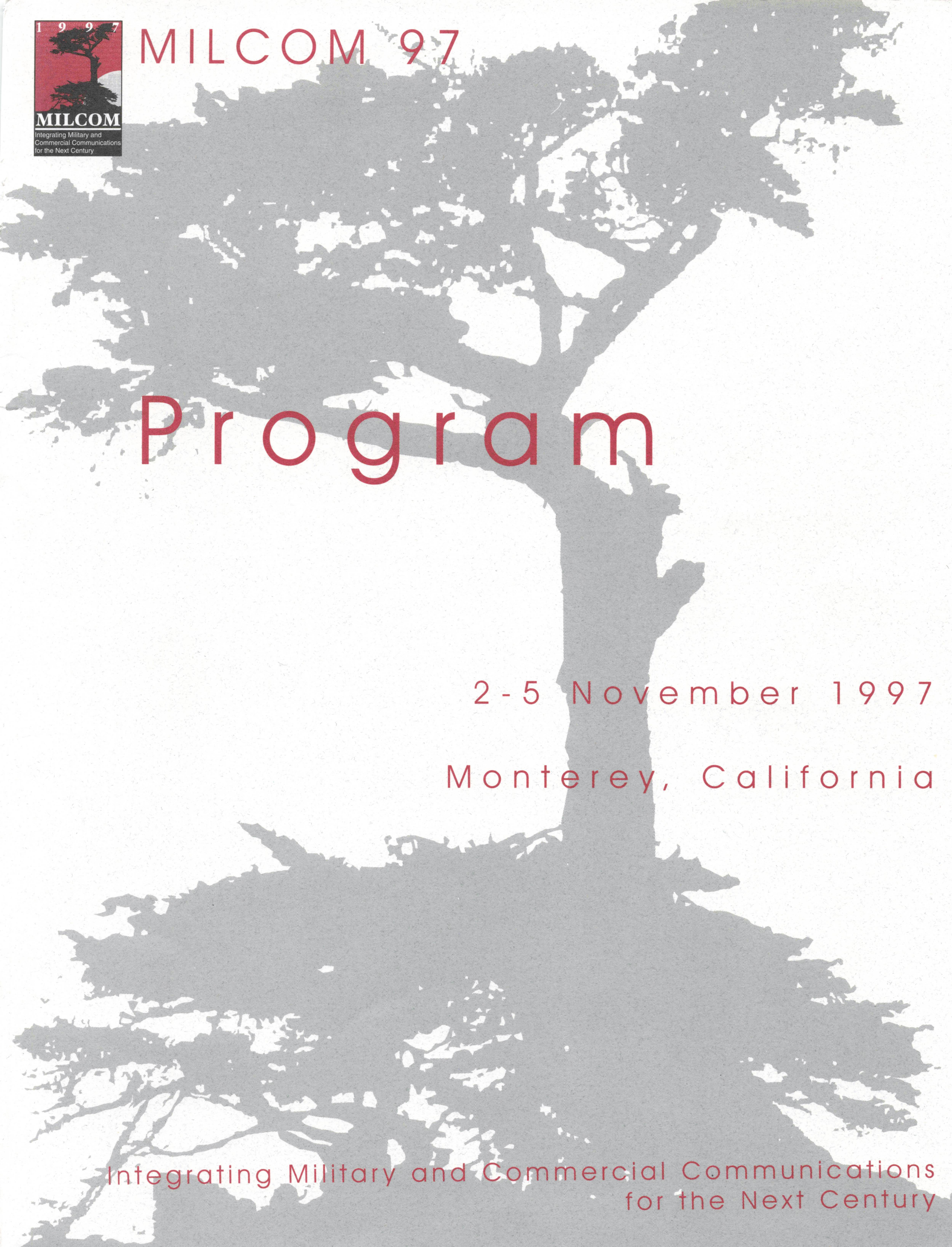


MILCOM 97

Program

2-5 November 1997

Monterey, California

Integrating Military and Commercial Communications
for the Next Century

Welcome from the General Chair

As Chairman of the conference and on behalf of the organizing committee, I am pleased to welcome you to the 1997 Military Communications Conference, MILCOM 97. The Institute of Electrical and Electronic Engineers and the Armed Forces Communications and Electronics Association are proud sponsors of this year's event. Lockheed Martin is pleased to act as the 1997 conference host.

The theme for this year's conference, *Integrating Military and Commercial Communications for the Next Century*, appropriately describes the direction that the communications industry is traveling today. With the extinction of the Cold War era, we have a unique opportunity to merge our military technologies with commercial technologies. This MILCOM 97 conference is committed to providing the participants the unique opportunity to attend sessions with a population of people from 28 countries around the world, many of whom are authors. The authors include those from Canada, Europe, Scandinavia, the UK, Czech Republic, Singapore, Korea, the United States, and more. The technical committee has developed an information packed, three-day program. The conference promises to give today's academic, government, and industry communications professional the latest in technical data on the systems supporting communications operations that are impacting and changing the world in which we live.

The challenges of meeting the increasing demands while competing in new international commercial markets are great. Our industry must support tough global security efforts while developing the commercial high technology infrastructure which is helping to foster competition in the worldwide marketplace of the 21st century.

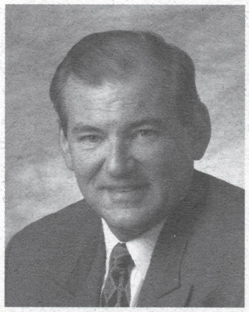
This resulting dual use market approach is a dynamic force that is driving the MILCOM conference. With over 70 cutting edge technical sessions, the 1997 MILCOM conference continues the legacy of providing the latest information from all areas of the communications industry.

We have some great speakers lined up for you, including General Howell Estes, Admiral Archie Clemins, Lieutenant General William Campbell, and Mr. Doug Dwyre. I am confident that you will enjoy their messages and our program. You will have the opportunity to work with many of the industry leaders in the communications field who will be in attendance. Thank you for coming. I look forward to seeing you.

Sincerely,

Mike Henshaw

General Chair
MILCOM 97



Mike Henshaw
General Chair

President
Lockheed Martin Missiles & Space (LMMS)

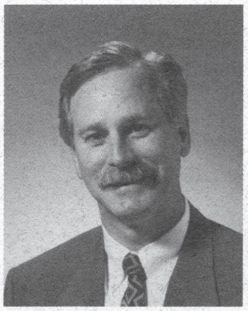
Jud Grubbs
Executive Chair

Program Director, Terminals
Lockheed Martin Telecommunications

Kathy Lukens
Executive Deputy

Public Relations, Military Space, LMMS

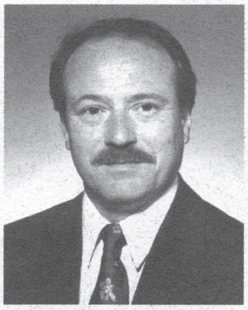
Welcome from the Technical Chair



Doug Bender
Technical Program Chair

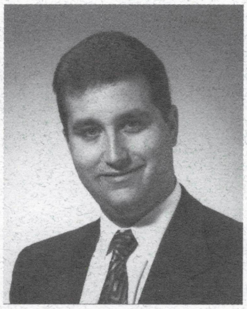
Vice President
Engineering, Integrated
Product Development

Lockheed Martin Western
Development Laboratories
(LMWDL)



Donald Fulop
Unclassified Chair

Director, Telecommunications
Programs, LMWDL



Dana Waldman
Classified Chair

Director, Systems Engineering
Laboratory, LMWDL

As Chairman of the technical committee for MILCOM 97, it is my pleasure to welcome you to our program. This year marks the 16th annual conference event that showcases the leading technologies of the military and commercial communications industries.

Our committee has put together over 70 technical program sessions that feature classified and unclassified presentations on many topics. We are also fortunate in having the Coronado here for viewing of state of the art communications for the future naval forces. These cutting edge presentations and tour will offer you the latest in up-to-date industry information and profile tomorrow's applications and products.

The commercial communications sector has become a new paradigm for our traditional defense communications industry. Commercial markets hold dynamic potential for implementation of former military technologies brought about by the end of the Cold War. International competition has also started to change and affect the way US defense companies interact with their traditional customer, the US government.

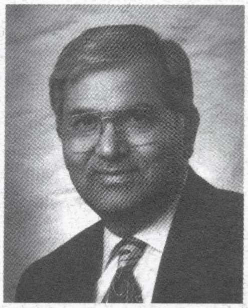
For this 16th MILCOM conference, we are confident that our technical program will help guide you through this interesting and challenging time as the dynamics in our market place constantly change. We hope to give you a unique view of the international communications future. We believe we have something for everyone.

Again, on behalf of the entire technical committee, I welcome you to MILCOM 97.

Sincerely,

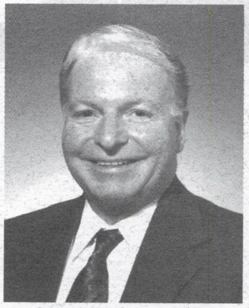
Doug Bender

MILCOM 97
Technical Program Chair



Sastri Kota
Tutorials and Panels Chair

Systems Engineer Consultant,
Lockheed Martin
Telecommunications



Ron Mason
Tutorials and Panels co-Chair

Program Manager,
Lockheed Martin Western
Development Laboratories

Contents

Subject Page

Welcome Letters

Welcome from the General Chair 1
Welcome from the Technical Chair 2
Welcomes from the DoD Advisor and the Naval Postgraduate School 4
Welcome from IEEE and AFCEA 5

Overview

Conference Speakers 6
Conference Overview 7
Technical Session Overview 8

General Information

Conference Arrangements 11
Patrons 13
Exhibitors Map 14
Exhibitors 15
Monterey Area Information 18

Maps

Monterey Area Map 21
Conference Location Map 22
Hyatt Regency Conference Center Map 23
Classified Session Site Map 24

Technical Session Information

Unclassified Panels 27
Classified Panels 29
Tutorials 31
Unclassified Technical Sessions 33
Classified Technical Sessions 54
Technical Demonstrations and Tours 62

Accommodations and Social Events

Accommodations and Phone Numbers 65
Special Events and Tours 66

Additional Information

Conference Committee 70
MILCOM 98 Call for Papers 72
AFCEA Membership Application 73
IEEE Membership/Subscription Application 75

Miscellaneous

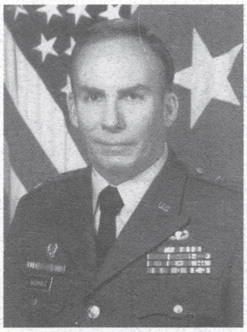
Author Index 80
Attendee Contacts 84

Patron Advertising

AT&T Government Markets 9
Boeing 10
Booz•Allen & Hamilton 19
GTE Government Systems 20
Lockheed Martin 25
Motorola 26
Space Systems/Loral 63
US WEST Communications 64
The Aerospace Corporation 68
Cabletron Systems 68
Hughes Space & Communications 69
Lucent Technologies 69
The MITRE Corporation 77
N.E.T. Federal 77
Rockwell International Corporation 78
TRW 78
Raytheon Company 79
SAIC 79

Photo: David Wickemeyer

Welcomes from the DoD Advisor and the Naval Postgraduate School



Lieutenent General Douglas D. Buchholz, United States Army
DoD Advisor

Director, Command, Control, Communications and Computer Systems

Over the past several years, the National Defense Community has begun implementation of military strategies and doctrines which include *information dominance* as a key tenet. The Joint Staff J6 is concentrating its efforts towards building an information infrastructure that supports a wide range of operational requirements. It takes focused architectural planning, developmental work, and a strong collaboration between the Department of Defense and industry to develop and deploy systems that more effectively support our warfighters.

Information dominance in the military context is not, and cannot, be restricted to collection and storage. We must develop and maintain an infrastructure that allows the right information to be received by the right users at the right times. The Command, Control, Communications, and Computer Directorate focuses its efforts toward the goal of providing greater support, more effectively—now and in the 21st century. The end-to-end integrity of these systems must endure the entire range of sophisticated attacks including file corruption, broadband jamming, and critical node destruction. Interoperability issues from electrical interface to waveform compatibility must be understood. We need to strive to ensure that our Soldiers, Sailors, Marines, and Airmen have information superiority when and where it is needed to ensure victory and fulfill the country's national security objectives.

AFCEA and IEEE address many of these complex communications issues at MILCOM 97 that will provide insights into how to achieve information superiority in support of Joint Vision 2010.

D.D. Buchholz

DoD Advisor
MILCOM 97

M.J. Evans

Superintendent, Naval Postgraduate School

I am delighted to extend my best regards to all attending the 16th Annual Military Communications Conference—MILCOM 97. The list of presenters and attendees is most impressive, bringing top academic, government, and industry communications professionals together for three days of informative and timely presentations on the latest industry information and profiles of future applications and products.

This year's theme, *Integrating Military and Commercial Communications for the Next Century*, aptly describes the direction in which military communications and the communications industry are headed. Industry and all branches of the government must work together to make the best of the new high technology systems available to our military services as their role in global security evolves.

The Naval Postgraduate School is please to host your classified sessions and panels, as well as the unclassified tutorials and plenary sessions. While you are not in conferences or participating in convention activities, you should take a moment to enjoy our beautiful campus and the gorgeous Monterey peninsula. I hope you have a most worthwhile and productive MILCOM 97. Welcome Aboard!

Warm Regards,

M.J. Evans

Superintendent, Naval Postgraduate School

Welcomes from IEEE and AFCEA

Welcome to this premier industry event. Your participation this year has helped us maintain the tradition of success that the MILCOM Conference has enjoyed for many years. This annual meeting is jointly sponsored by the Armed Forces Communications and Electronics Association (AFCEA) and the IEEE Communications Society (ComSoc).

Though the temptations for fun and sport abound here on the California coast, I hope you will take advantage of many learning opportunities from MILCOM's full program. Please also visit the exhibition area to learn about the latest product/ service enhancements our patrons are demonstrating.

If you are a current ComSoc member, I encourage you to take advantage of the many benefits you're entitled to, in addition to your registration discount to MILCOM. If you are not currently a ComSoc member, I encourage you to join today.

You may have accessed the MILCOM 97 conference information right from your desk at the ComSoc web site at www.comsoc.org. The Conferences section of the ComSoc website provided the latest information about MILCOM 97, as well as a schedule of other conferences. Use this site for broadening your technical expertise.

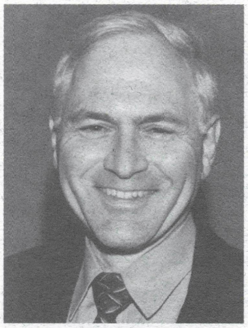
Since its founding in 1952, ComSoc has taken the lead in the dissemination of innovative technological advances. Its 40,000 members worldwide represent a close knit community of industry professionals with a common interest in advancing all communications technologies.

Again, welcome to MILCOM 97, thank you for participating and enjoy.

Regards,

Stephen B. Weinstein

President, IEEE Communications Society



Steve Weinstein

President, IEEE
Communications Society

On behalf of AFCEA, welcome to MILCOM 97. AFCEA is proud to be a cosponsor, with the IEEE Communications Society, of this renowned event. MILCOM is a unique and multifaceted forum for government-industry dialogue, providing the latest in communications technology and military applications.

MILCOM 97 offers the full spectrum of professional development—with comprehensive coverage of the most important issues facing today's military and government leaders; the chance to meet and talk with the key players in the fields, a look at the technologies which will drive military communications in the 21st Century; technical paper presentation from noted experts; and wide-ranging networking opportunities. It is up to you to take full advantage of this outstanding Conference, because the professional benefit you derive will be in direct proportion to your level of involvement.

We are pleased that you have joined us here, and we wish you a successful Conference. Your presence and active participation enhances MILCOM's reputation as the premier military communications event in the world.

Sincerely,

C. Norman Wood

President and CEO, AFCEA International

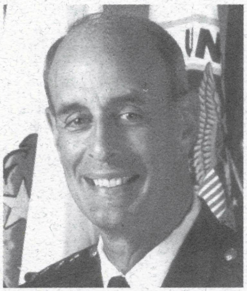
C. Norman Wood
Lieutenant General
United States Air Force (ret.)

President and CEO, AFCEA
International

Conference Speakers

Plenary Speaker

King Hall Auditorium
Naval Postgraduate School



Monday, 3 November—7:30 am to 8:45 am

General Howell M. Estes, III, United States Air Force

General Howell M. Estes III is Commander in Chief of the North American Aerospace Defense Command (CINCNORAD) and United States Space Command (USCINCSPACE), and Commander of Air Force Space Command (COMAFSPC) headquartered at Peterson Air Force Base, CO.

General Estes is responsible for the air sovereignty of the United States and Canada, directing space control and support operations, including theater missile defense, and directing satellite control, warning, space launch, and ballistic missile operations missions through a worldwide network of support facilities and bases.

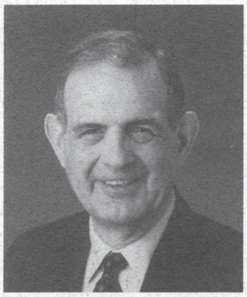
Luncheon Speakers

Regency Grand Ballroom

Monday, 3 November

Admiral Archie Clemins, United States Navy
Commander in Chief, United States Pacific Fleet

Admiral Archie Clemins is the Commander in Chief of the United States Pacific Fleet. He is responsible for the world's largest combined fleet command. Admiral Clemins' flag tours have capitalized on the information technology era and have been characterized by innovation. He established a worldwide classified electronic conductivity between his staff and all three major fleet commanders during his tours.



Tuesday, 4 November

Douglas D. Dwyre, President, Globalstar

Douglas D. Dwyre is President of an international partnership that will provide a new generation of satellite-based telephony services worldwide by 1998. He has been involved in international communications and satellite manufacturing for more than 30 years.

Wednesday, 5 November

Lieutenant General William H. Campbell, United States Army
Director of Information Systems for Command, Control, Communications, and Computers (DISC4)

General Campbell has held four key flag rank positions in Army Acquisition over the past 10 years. His last position was as the Program Executive Officer (PEO) Command and Control and Communications Systems (PEOC3S). During this time, he served as the Systems Architect for the Force XXI Advanced Warfighting Experiments. His other flag rank assignments include PEO, Command and Control and PEO Intelligence and Electronic Warfare.

MILCOM 97

Conference Overview

Sunday 2 November	Monday 3 November	Tuesday 4 November	Wednesday 5 November	
1pm–7pm	7am–5pm	7am–5pm	7am–noon	**Registration** *Hyatt Conference Center*
6:30pm-8:30pm	10am–5pm	10am–5pm	10am–2pm	**Exhibits** *Monterey Ballroom*
	7:30am–8:45am	7:30am–8:45am *See MILCOM Today for details*		**Plenary Sessions** *King Hall Auditorium, Naval Postgraduate School*
	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	**Unclassified Sessions** *Hyatt Conference Center*
	9:15am–12:15pm	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	**Classified Sessions** *Naval Postgraduate School*
	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	**Tutorials** *Glasgow Hall, Naval Postgraduate School*
	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	9:15am–12:15pm 2:30pm–5:30pm	**Panels** ***Classified**—Naval Postgraduate School* ***Unclassifed**—Regency Grand Ballroom II and III*
	12:30pm–2pm	12:30pm–2pm	12:30pm–2pm	**Luncheons** *Regency Grand Ballroom*
Welcome Reception 6:30pm–8:30pm	Monterey Bay Aquarium Social 7:30pm–11pm	Reception 6:30pm–7:30pm Chairman's Banquet 8pm–10pm		**Special Evening Events**
	Big Sur and Point Lobos Sightseeing (Nature Walk) 9am–4pm	Monterey Peninsula, 17-Mile Drive, Wine Tasting 10am–3:30pm	Sightseeing and Shopping Shuttle 10am–4pm	**Leisure Activities**

*Check **MILCOM Today** for any schedule changes*

Unclassified Sessions

Hyatt Conference Center

Monday 3 November—Morning Session

Coding
Nonlinear Processing and Interference Rejection
Cellular and PCS Advances
MILSATCOM and Interoperability
Commercial and Tactical Internet
Application of Video and Multimedia Communications to the DoD
Phased Arrays and Advanced Antennas

Monday 3 November—Afternoon Session

Detection and Coding for Data Communications
Modeling and Simulation
Information Management and Distribution
Communications Relays
Architecture and Protocols 1
Traffic Management in ATM-based Networks
Speech Processing

Tuesday 4 November—Morning Session

Modulation Techniques 1
Spread Spectrum and Antijam Advances
Information Dissemination
Mobile Wireless Information Systems
Architecture and Protocols 2
Software Design and Applications
Smart Antennas

Tuesday 4 November—Afternoon Session

Modulation Techniques 2
Interference Suppression for Multiuser Mobile Communications
Global Broadcast System/Services
Satellite Communications
Multicasting
Information Management Systems
HF and Ground Communications

Wednesday 5 November—Morning Session

Adaptive Processing
Communication Security
Tactical Application of Commercial PCS and DBS
DoD Communications Advances 1
Network Management and Control 1
Wireless Networking—Systems/Implementation
Communication System Integration and Modeling

Wednesday 5 November—Afternoon Session

Signal Detection and Classification
Information Security
Ground Station Technologies
DoD Communications Advances 2
Network Management and Control 2
Wireless Networking—Research/Protocols
Expert/AI Systems

Classified Sessions

Naval Postgraduate School

Monday 3 November—Morning Session

Laser Communications
In-Theater Communications Programs
Data Visualization (Battlespace Awareness)
Encryption Systems, Doctrine, and Policies

Monday 3 November—Afternoon Session

(no classified sessions)

Tuesday 4 November—Morning Session

SATCOM Technology
Global Broadcast Satellite System
Policy Issues for Information Management
Milstar Roles and Functions in the Next Millennium

Tuesday 4 November—Afternoon Session

Adaptive Transmission Systems
PCS and Other Wireless Systems
Information Warfare

Wednesday 5 November—Morning Session

Advanced Communications Techniques
Transportable and Mobile Satellite Earth Terminals
Multilevel Secure Computer Systems and Architecture
Military Satellite Systems

Wednesday 5 November—Afternoon Session

Array Antenna Systems
Communication Networks on the Move
Dynamic Bandwidth Management
Infosec/Vulnerability

No briefcases, portfolios, electronic recording devices, cameras, photography, computing equipment, cellular phones, or note taking is permitted at the classified sessions.

Topics subject to change

Whether you're delivering information across the state or around the globe, only AT&T delivers the world's most reliable, innovative and secure technology solutions. From force deployment to inventory mobilization to command support, AT&T has proven its ability to help you in the past and to propel you into the future through innovative technology alliances and partnerships.

Launch Your Communications Strategy into the Future with AT&T

You can rely on our professional services organization and system integration capabilities for a complete range of mission-critical solutions, which include:

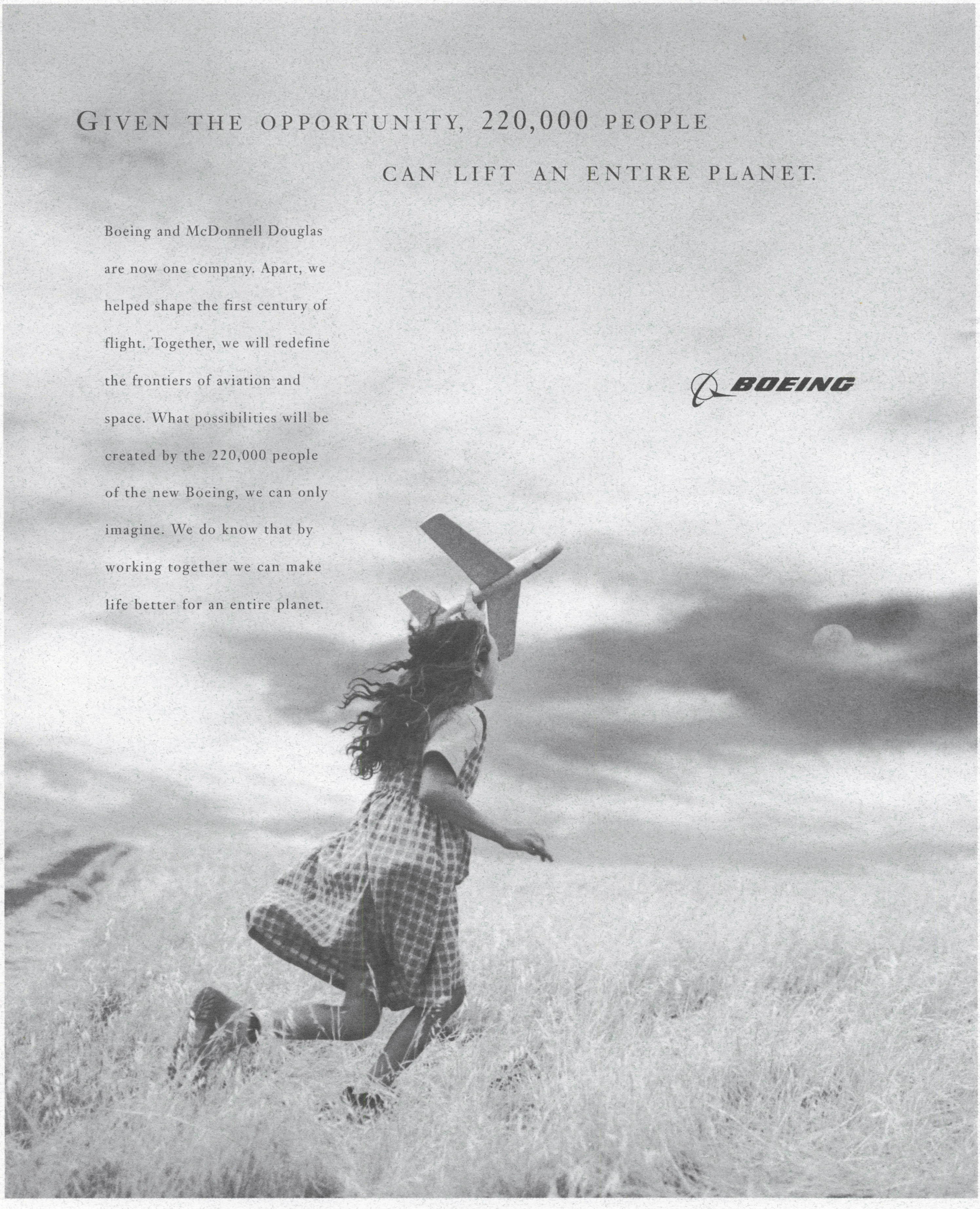
- Tactical Deployed Systems and Services
- Global Broadcast Services
- Smart Base Development
- Access Consolidation
- Base Level Modernization
- Electronic Commerce

As a Platinum Patron, we invite you to join us at MILCON'97 on November 2-5 to discuss how AT&T can put decades of reliability, unsurpassed technology and industry-leading customer service to work for your mission.

AT&T

Government Markets
We Serve the People Who Serve the People

Visit Our Web site at: http://www.att.com/gov/



GIVEN THE OPPORTUNITY, 220,000 PEOPLE
CAN LIFT AN ENTIRE PLANET.

Boeing and McDonnell Douglas are now one company. Apart, we helped shape the first century of flight. Together, we will redefine the frontiers of aviation and space. What possibilities will be created by the 220,000 people of the new Boeing, we can only imagine. We do know that by working together we can make life better for an entire planet.

BOEING

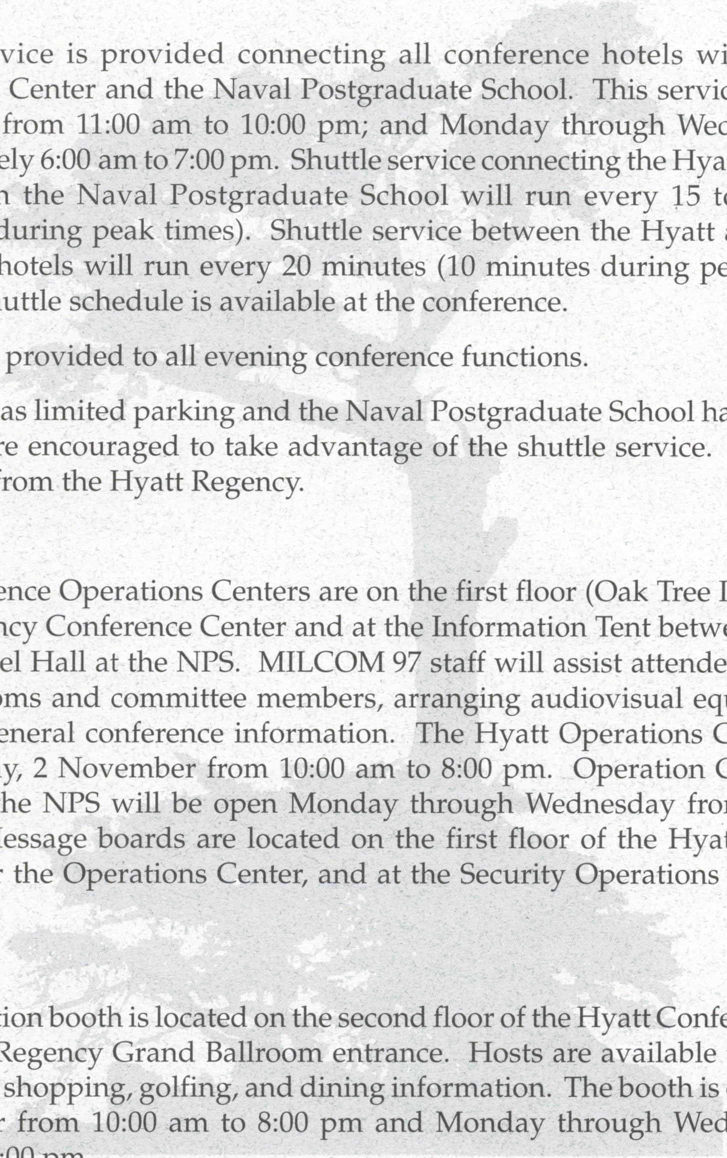
Conference Locations

MILCOM 97 is held at the Hyatt Regency Monterey in Monterey, California. All luncheons, unclassified technical sessions, panels, exhibits, and the Chairman's Banquet are at the Hyatt.

Classified sessions and panels, unclassified tutorials, and plenary sessions are at the nearby Naval Postgraduate School (NPS). No briefcases, portfolios, electronic recording devices, cameras, photography, computing equipment, cellular phones, or note taking is permitted at the classified sessions.

Both facilities accommodate wheelchair access.

At the NPS, no smoking is allowed in any Government building or within 500 feet of any entrance to a Government building. At the Hyatt, no smoking is allowed in any public room.



Conference Transportation

Shuttle service is provided connecting all conference hotels with the Hyatt Convention Center and the Naval Postgraduate School. This service is available on Sunday from 11:00 am to 10:00 pm; and Monday through Wednesday from approximately 6:00 am to 7:00 pm. Shuttle service connecting the Hyatt Convention Center with the Naval Postgraduate School will run every 15 to 20 minutes (5 minutes during peak times). Shuttle service between the Hyatt and the other conference hotels will run every 20 minutes (10 minutes during peak times). A complete shuttle schedule is available at the conference.

Shuttles are provided to all evening conference functions.

The Hyatt has limited parking and the Naval Postgraduate School has no parking; attendees are encouraged to take advantage of the shuttle service. The NPS is a short walk from the Hyatt Regency.

Operations Center and Message Board

The Conference Operations Centers are on the first floor (Oak Tree I, II, III) of the Hyatt Regency Conference Center and at the Information Tent between Root Hall and Spanagel Hall at the NPS. MILCOM 97 staff will assist attendees in locating meeting rooms and committee members, arranging audiovisual equipment, and obtaining general conference information. The Hyatt Operations Center will be open Sunday, 2 November from 10:00 am to 8:00 pm. Operation Centers at the Hyatt and the NPS will be open Monday through Wednesday from 7:00 am to 5:30 pm. Message boards are located on the first floor of the Hyatt Conference Center, near the Operations Center, and at the Security Operations Center at the NPS.

Information Booth

An information booth is located on the second floor of the Hyatt Conference Center, next to the Regency Grand Ballroom entrance. Hosts are available to assist with sightseeing, shopping, golfing, and dining information. The booth is open Sunday, 2 November from 10:00 am to 8:00 pm and Monday through Wednesday from 8:00 am to 5:00 pm.

Daily Updated Information

MILCOM Today, a conference newsletter, is published daily containing updated information or any schedule changes. Copies are available near the information booths at both the Hyatt Conference Center and the NPS.

Luncheons and Breaks

Conference luncheons are in the Hyatt Regency Grand Ballroom. At both the Hyatt and the NPS, coffee, tea, and a light continental breakfast are provided in the mornings, and a variety of beverages and snacks in the afternoons. Check the NPS map for refreshment locations.

MILCOM Guest Suite

A suite is available at the Hyatt Regency where guests of conference attendees can relax and meet others: Room 1209. Hours are Sunday, noon to 5:00 pm, and Monday through Wednesday, 7:00 am to 5:00 pm. Refreshments are available in the suite throughout the day.

Speaker Rehearsal Rooms

Speaker rehearsal rooms, where speakers will be able to rehearse their presentations, are available at the Hyatt Regency Conference Center (Grand Ballroom VI) and the NPS (Glasgow Hall, Room 103). Check the Information Tent at the NPS for reservations for Glasgow Hall.

Press Room

A press interview room is available at the Hyatt Regency: Suite 604. Hours of operation are Sunday, 1:00 pm to 5:00 pm; and Monday through Wednesday, 10:00 am to 5:00 pm. A MILCOM 97 Public Relations staff member is available with conference information and will assist in arranging interviews.

Security Operations

Security Operations at the Hyatt Conference Center is on the first floor (Mark Thomas Board Room). There is a Security Booth on the second floor next to Registration. Security Operations at the Naval Postgraduate School is in Spanagel Hall: Room 101A.

NPS Protocol

The Naval Postgraduate School (NPS) is not a commercial conference center; it is the Navy's University and has a prescribed mission. Attendees are guests of the Superintendent and should not interfere with the normal academic routine of the School. Civilian coat and tie is the customary dress on campus; comparable attire is customary for women. Conference attendees are expected to conform with this dress code. All guests of the NPS are asked to observe the Navy traditions of *Attention to Colors* and *Evening Colors*. These occur each day at 0800 hours (8:00 am) and sunset. Civilian and military personnel who are outside the buildings on base are requested to stop walking and remain silent; individuals in moving vehicles are requested to stop.

Proceedings

All paid attendees will receive a copy of the unclassified proceedings on CD ROM. In addition, US attendees who have paid for classified sessions will receive a printed classified proceedings containing all papers presented in the classified sessions; international attendees who have paid for classified sessions will receive a printed classified proceedings containing those unclassified papers presented in the classified sessions. Extra printed proceedings copies are available for $65.00 at the Proceedings Distribution table on the first floor of the Hyatt next to the Operations Center.

Mailing Service

Mailing service is provided to ship conference materials to attendees' home or office. Check with the Operations Center for this service.

MILCOM 97 is sponsored jointly by AFCEA (the Armed Forces Communications and Electronics Association) and the IEEE Communications Society.

Platinum Patrons
$10,000

AT&T Government Markets (www.att.com)

Boeing (www.boeing.com)

Booz•Allen & Hamilton, Inc. (www.bah.com)

GTE Government Systems Corp. (www.gte.com)

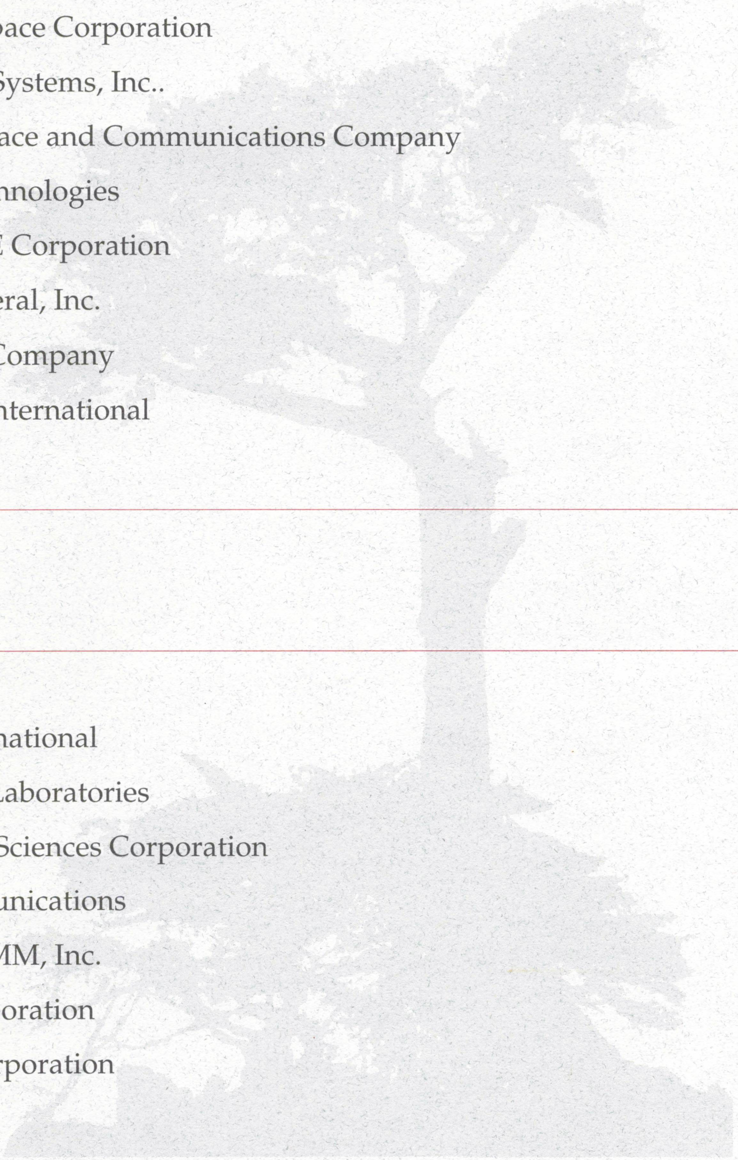
Lockheed Martin (www.lmco.com)

Motorola (www.mot.com)

Space Systems/Loral (www.ssloral.com)

US WEST Communications Federal Services, Inc. (www.uswest.com)

Gold Patrons
$5,000



The Aerospace Corporation

Cabletron Systems, Inc..

Hughes Space and Communications Company

Lucent Technologies

The MITRE Corporation

N.E.T. Federal, Inc.

Raytheon Company

Rockwell International

TRW

Silver Patrons
$3,000

SAIC

Bronze Patrons
$1,500

BDM International

COMSAT Laboratories

Computer Sciences Corporation

L-3 Communications

QUALCOMM, Inc.

Ricoh Corporation

V-ONE Corporation

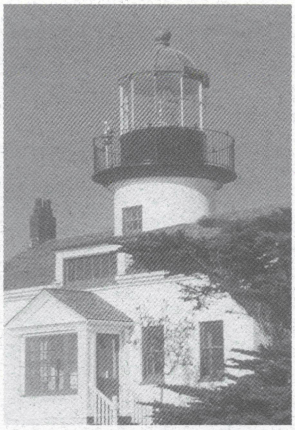
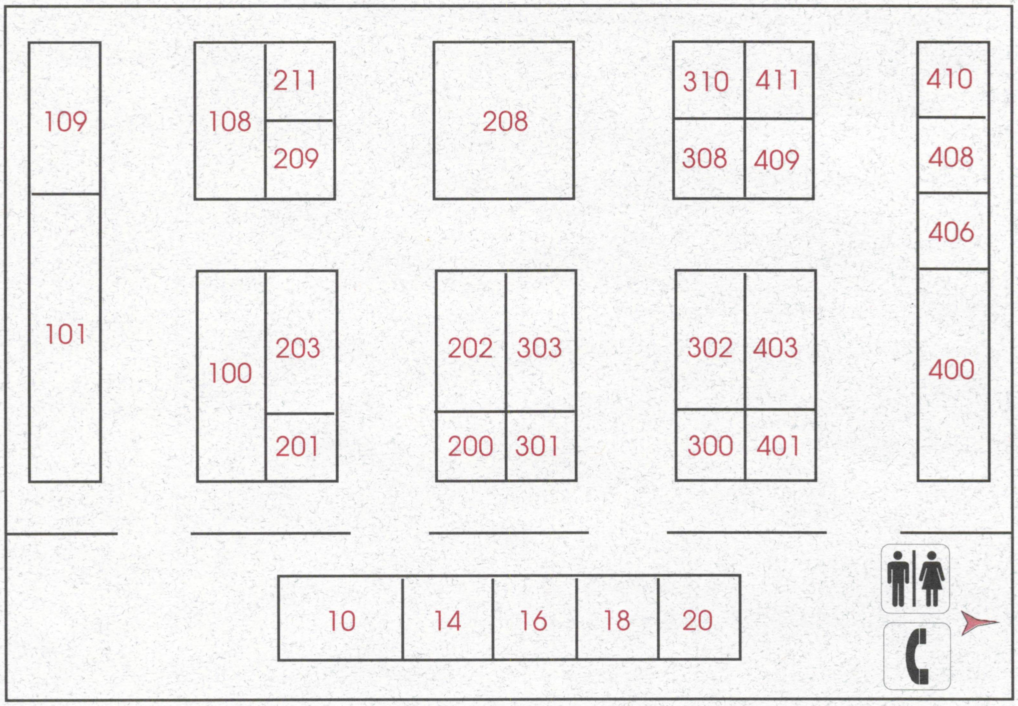


Photo: Monterey Peninsula Visitors & Convention Bureau

Exhibitors Map

Montery Ballroom



Exhibitors

Booth	Company
10	Booz•Allen & Hamilton, Inc.
14	Digital Equipment Corporation
16	Z Microsystems, Inc.
18	Trex Communications, Inc.
20	SiCOM
100	Hughes Space & Communications Company
101	Raytheon Company
108	KVH Industries, Inc.
109	Motorola Space and Systems Technology Group, Government Space Systems Division
200	Analytical Graphics, Inc.
201	National Institutes of Health
202	TRW, Inc.
203	Boeing
208	Lockheed Martin
209	ViaSat
211	COMSAT Laboratories
300	Titan Linkabit
301	ADC Telecommunications, Inc.
302	MIL 3, Inc.

Booth	Company
303	AT&T Government Markets
308	Austin Information Systems, Inc.
310	United States Army Space and Missile Defense Battle Lab
400	National Security Agency, Network Security Solutions
401	TSI Telesys Inc.
403	GTE
406	Phototelesis, a Division of Texas Instruments
408	Lucent Technology Government Solutions
409	BMC Software
410	Ortel Corporation
411	Cell-Tel International, Inc.

Promotional Pavilion

CACI Products Company

National Security Agency

Time Domain Corporation

Registration

FCW Government Technology Group

Photo: Bob Chapanot

Exhibitor Directory

ADC Telecommunications, Inc.—*Booth 301*
ADC supplies transmission and networking systems used to deliver voice, data, and video services and physical connectivity products for wireless, fiber-optic, twisted pair, and coaxial networks.

Analytical Graphics, Inc.—*Booth 200*
Analytical Graphics, Inc. (AGI) develops Satellite Tool Kit (STK)™, the market-leading commercial numerical and graphical analysis tool for the space industry. Users can easily access, manage, display, and manipulate data, visualizing complex satellite operations in a technically accurate environment.

AT&T Government Markets—*Booth 303*
Launch your communications strategy into the future with AT&T. Decades of reliability...unsurpassed technology...and industry leading customer service. That's AT&T's commitment to communications anytime, anywhere, any mission.

Austin Information Systems, Inc.—*Booth 308*
AIS developed a Tri-Band terminal using a single feed for simultaneous operation in multiple bands—low cross pol, dual-offset Gregorian 24.m antenna system that meets DSCS, Intelsat, and Eutelsat requirements.

BMC Software—*Booth 409*

Boeing—*Booth 203*
The Boeing Company will exhibit progress in broadcast ATM Technology developed in partnership with IBM. This is an example of technologies Boeing pursues to provide information services to mobile platforms.

Booz•Allen & Hamilton, Inc.—*Booth 10*
Booz·Allen & Hamilton, Inc. is an international technology consulting firm committed to helping organizations solve complex problems. Support to the armed forces and government includes expertise in telecommunications/C^3, information technology, intelligence, and systems integration.

CACI Products Company—*Promotional Pavilion*
COMNET III™ and COMNET Predictor™ are powerful simulation and network planning tools that model proposed network designs. They work with your existing systems to reduce the risk of network changes. They model LANs, WANs, and internetworks.

Cell-Tel International, Inc.—*Booth 411*
Manufacturer of Rapid Deployment Cellular Communications Center (RD3C), a portable, versatile, and self-supporting mobile solution for emergency communications, disaster recovery, and special events. Each RD3C is custom built to meet the rigorous demands of the US military.

COMSAT Laboratories—Booth 211
COMSAT Laboratories provides technical consulting and advanced communications products in satellite communications for military and commercial customers. Network Planning Systems and STM via satellite will be demonstrated at MILCOM 97.

Digital Equipment Corporation—*Booth 14*
Digital delivers IT-21, Joint Vision 2010 information technology. COTS supported network centric solutions: logistics, telemaintenance, messaging, information protect, distance learning. Systems integration industry leader providing tomorrow's technologies for today's warfighter.

Photo: David Wickemeyer

FCW Government Technology Group—*Booth 1*
FCW Government Technology Group brings buyers and sellers together by delivering timely, comprehensive, and compelling information and custom services for government information technology executives and their industry partners through a variety of media. FCW Government Technologies Group publishes *Federal Computer Week*, the news-oriented publication in a suite of print and on-line products that includes *Government Best Buys*, a

monthly editorial supplement providing independent product reviews and tests for public sector information technology buyers; *civic.com*, a hybrid monthly publication/web site for state and local government buyers; *Federal Integrator*, an annual editorial supplement for the systems integration community; and *fcw.com*, an on-line guide to government information technology. FCW Government Technology Group is an IDG Company.

GTE—*Booth 403*
GTE Government Systems is a leader in Tactical and Strategic Communications Systems for military forces and Government worldwide. GTE is the largest US-based local telephone company, and the second largest cellular provider in the US serving almost 30 percent of the population. GTE Military Communications are used worldwide.

Hughes Space & Communications Company—*Booth 100*
Hughes Space & Communications, the world's premier satellite manufacturer, will highlight systems suitable for MILSATCOM, surveillance and scientific applications. HSC will feature how commercially proven technologies can be leveraged for government applications.

KVH Industries, Inc.—*Booth 108*
KVH Industries develops, manufactures, and markets digital navigation systems and mobile satellite communications systems for use in commercial, military, and marine applications.

Lockheed Martin—*Booth 208*
Lockheed Martin Corporation provides a variety of products and services to the communication industry for both commercial and military applications. Lockheed Martin's legacy of high quality systems integration and services provide the customer with mission success. Join us at MILCOM 97 to view our latest advances in the communications field.

Lucent Technology Government Solutions—*Booth 408*
Lucent Technologies Government Solutions will demonstrate new applications of the Internet, Wireless, and Broadband/Multimedia Technologies.

MIL 3, Inc.—*Booth 302*
MIL 3, Inc. is the leader in network modeling and simulation tools. MIL 3 develops and manufactures OPNET Modeler, a software tool for simulating communications networks and protocols. OPNET Modeler/Radio is an extension of the Modeler version with capabilities for modeling radio links, satellites, and mobile nodes.

Motorola Space and Systems Technology Group, Government Space Systems Division—*Booth 109*
Motorola has been in space for nearly 40 years providing space communications solutions and systems integration expertise. Products include near-Earth and deep space TT&C equipment, attitude control and navigation equipment, and payload subsystems. Motorola is the prime contractor for the IRIDIUM® system.

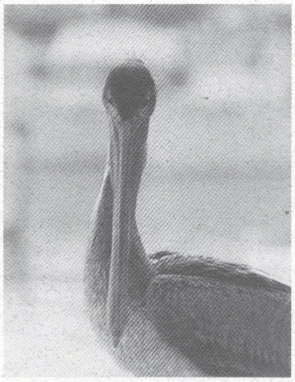


Photo: Bob Chapanot

National Institutes of Health—*Booth 201*
The National Institutes of Health (NIH) has awarded three Government-wide Area IDIQ contracts: Electronic Computer Store, Image World, and chief Information Officers Solutions and Partners. Each is available to all government agencies right now to provide products and task orders better, faster, and cheaper than ever before in the government.

National Security Agency—*Promotional Pavilion*
A world leader in information systems security, NSA's Information Systems Security Organization will feature *Solutions for a Safer World*, highlighting products and services to be used by the warfighter, government, and industry.

National Security Agency, Network Security Solutions—*Booth 400*
The National Security Agency's booth will address the network security challenges we face today. Personnel will demonstrate both government and commercially developed workstation and network products which provide a wide range of security capabilities.

Ortel Corporation—*Booth 410*
Ortel, the world's leading supplier of fiber-optic links for commercial and military SATCOM, introduces a low-cost 70-MHz transceiver enabling 1-km antenna remoting. Links to 18-GHz also available.

Phototelesis, a Division of Texas Instruments—*Booth 406*

Raytheon Company—*Booth 101*
Raytheon's diverse and growing businesses cross a significant spectrum of technologies and products, such as EHF, SHF, C, Ku and Ka band terminals, SATCOM equipment, Global Broadcast SATCOM, Universal Modem, VME Radio baseband products, Commander's Tactical Terminals, and the Cooperative Engagement Capability system. Raytheon Company maintains a tradition of technical excellence, innovation, and an unshakable commitment to quality.

SiCOM—*Booth 20*
Very high speed, ASIC-based digital modem technology is SiCOM's domain. Products range from military relevant interference/distortion tolerant modems to 155-Mbps commercially focused modems. Products include ships, boards, and boxes.

Time Domain Corporation—*Promotional Pavilion*

Titan Linkabit—*Booth 300*
Titan Linkabit is dedicated to providing superior, cost-effective communications equipment and defense electronic systems to key US government and allied users. Linkabit is a world leader in the design, development, and production of DAMA SATCOM systems such as the LSM-1000 UHF SATCOM modem, the LST-5D UHF SATCOM modem, and the AN/USC-42 Mini-DAMA SATCOM terminal. Linkabit also designs and produces multiband terminals, including the LST-8000(V)T, providing high data rate C, X, and Ku-band global communications.

Trex Communications, Inc.—*Booth 18*
TrexCommunications, Inc. produces advanced high-speed, free-space Laser Communications systems for tactical, space, air-to-ground and air-to-air applications for DoD and commercial customers.

TRW Inc.—*Booth 202*
TRW will feature the latest high technology advancements in MILSATCOM spacecraft, payload, and microelectronics. Included will be advanced Milstar and MMIC/GaAs.

TSI Telesys Inc.—*Booth 401*
Gateway Systems connect LANs/WANs to satellites and incorporate Field Programmable Gate Arrays which can be programmed as parallel-processing computers and *reconfigured* by downloading new functions allowing hardware to be changed *ad infinitum*.

US Army Space and Missile Defense Battle Lab—*Booth 310*
Multimedia information briefing illustrating the core competencies and capabilities of SMOC-BL who integrates commercial technology to support the Warfighter.

ViaSat—*Booth 209*
MD-1234/U UHF SATCOM DAMA Modem, AN/PSC-5 Manpack Terminal; Advanced Data Controller (ADC) products, including the new PCMCIA Card Version; Tri-Band SATCOM DAMA Modem, Embeddable Infosec.

Z Microsystems, Inc.—*Booth 16*
Z Microsystems, Inc. specializes in the development, integration, manufacture, and support of TRANZpak and SMARTpak high-performance, high-capacity SCSI removable storage systems, 19-inch rack-mount solutions, and video software.

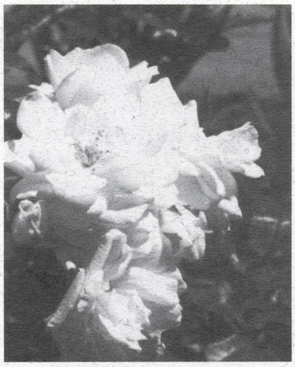


Photo: David Wickemeyer

Monterey Area Information

Location

The Monterey Peninsula, located 86 miles south of San Francisco along scenic Highway 1, is home to a variety of sights and activities. Monterey Bay contains sea otters, whales, and abundant sea life unequaled on the California coast.

Golf, Tennis, Hiking, and Other Activities

Photo: Bob Chapanot

Within a short distance from the conference are 20, 18-hole golf courses. The Del Monte Golf Course is adjacent to the Hyatt Regency and conference attendees can receive discounted green fees. Preferred rates at the Fort Ord and Naval Postgraduate School courses are available. Check at the Information Booth at the Hyatt for a schedule of tee times and fees.

Hiking and equestrian trails, 125 tennis courts, and the Old Monterey Walking Tour are nearby.

Walk historic Cannery Row, immortalized by John Steinbeck, and visit the many shops and restaurants.

Rent a bicycle and ride through Pacific Grove, winter home of the migrating Monarch Butterfly, to the Point Pinos Lighthouse.

Nearby Fisherman's Wharf is a hub of bay activities: sea kayaking, sailing charters, bay cruises, fishing, scuba diving, and whale watching.

Art galleries, museums, antique stores, factory outlets, and wineries are all within a few minutes' drive.

Sights

Travel the scenic 17-Mile Drive, a unique blend of forest, rocky coast, and ocean, plus the Lone Cypress and the famous 18th hole at Pebble Beach.

Carmel-by-the-Sea, with quaint shops, galleries, and restaurants, is only 3.5 miles away.

And within an hour's drive is beautiful Big Sur, with its majestic forests and spectacular coastline.

Additional Information

Further information on Monterey area sights and activities can be obtained at the MILCOM 97 Information Booth.

How do we keep **critical information networks secure?**

How can **nations communicate better?**

How do we defend against **terrorists and aggressors?**

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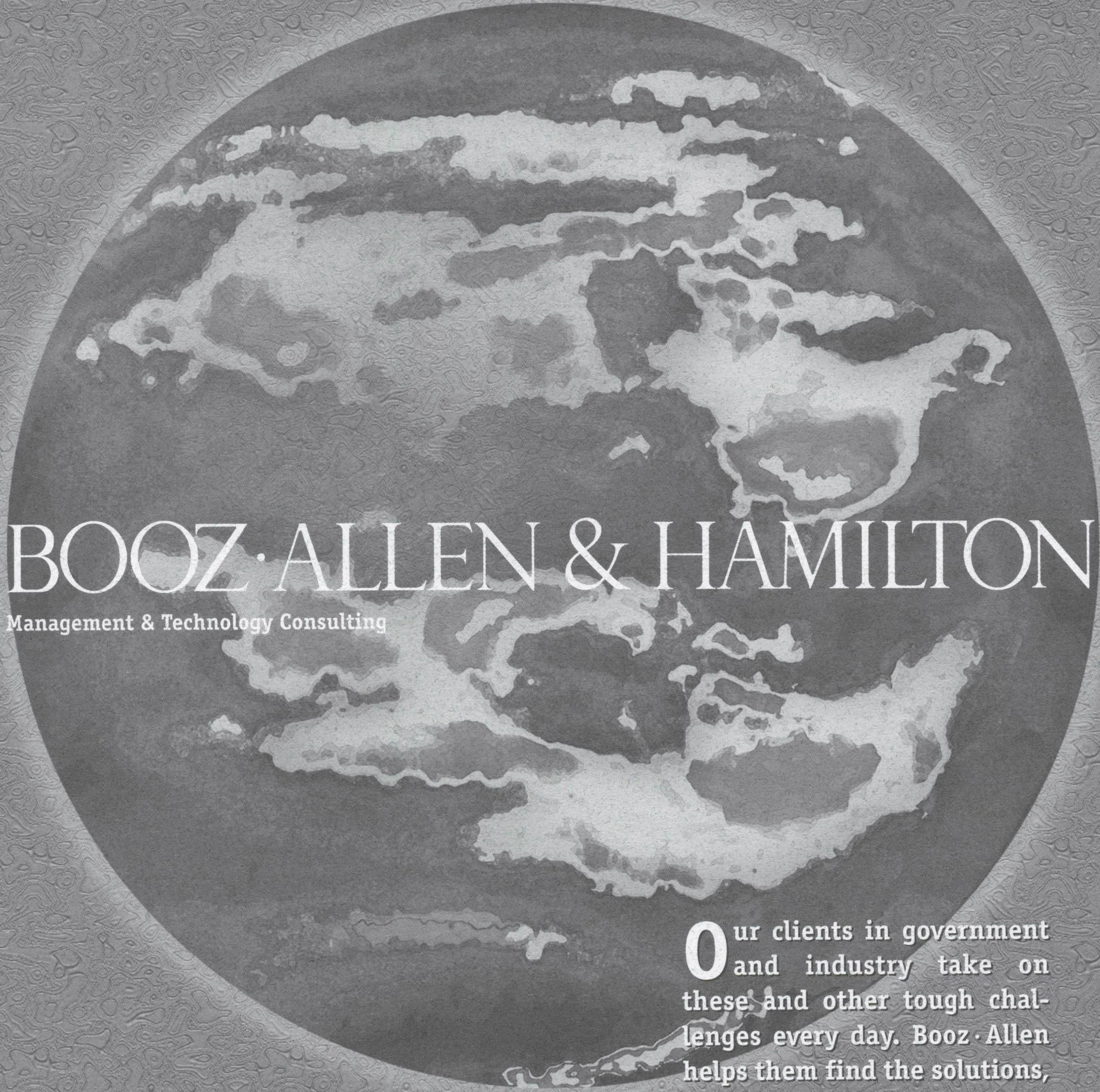

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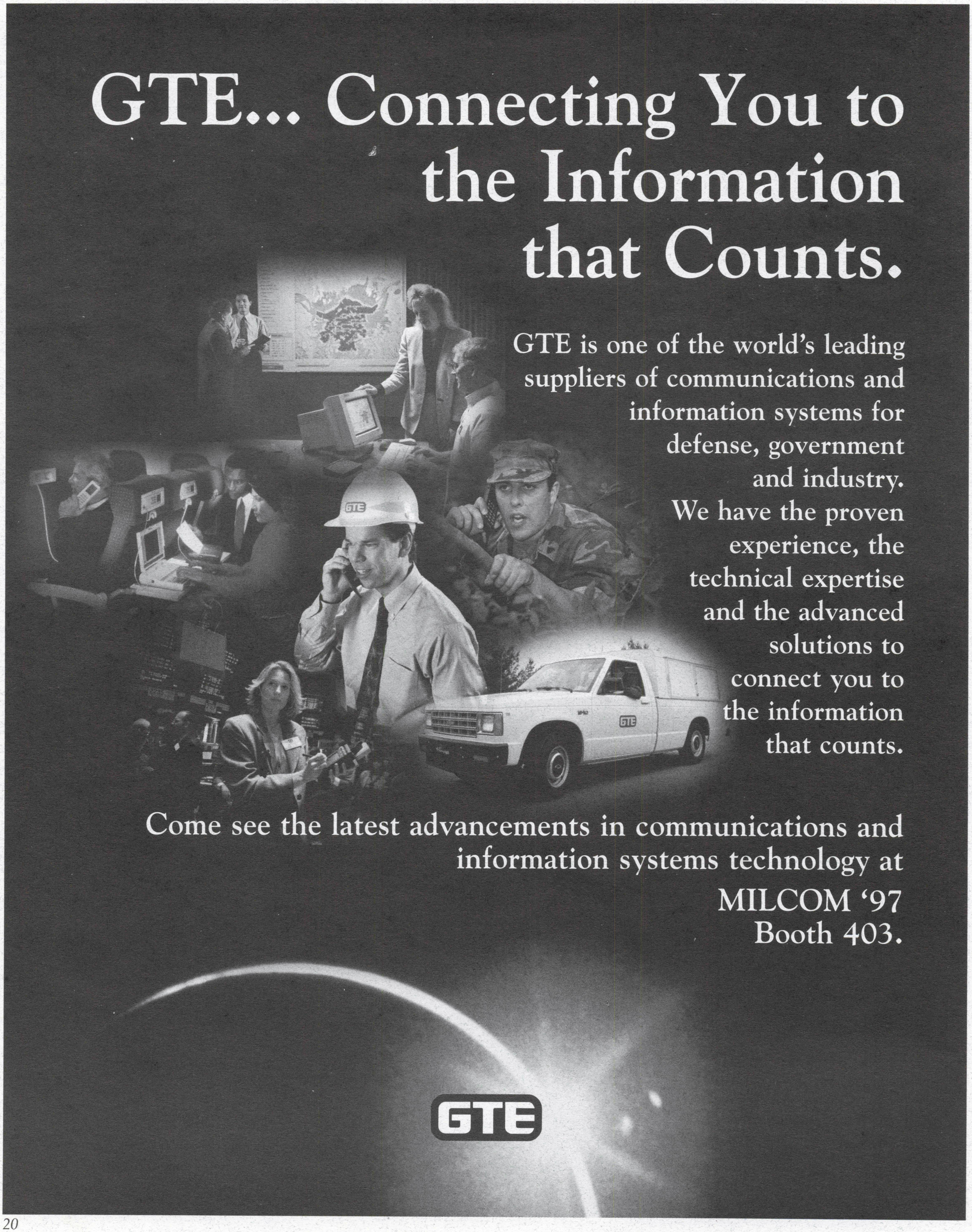

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the Information
that Counts.

GTE is one of the world's leading suppliers of communications and information systems for defense, government and industry. We have the proven experience, the technical expertise and the advanced solutions to connect you to the information that counts.

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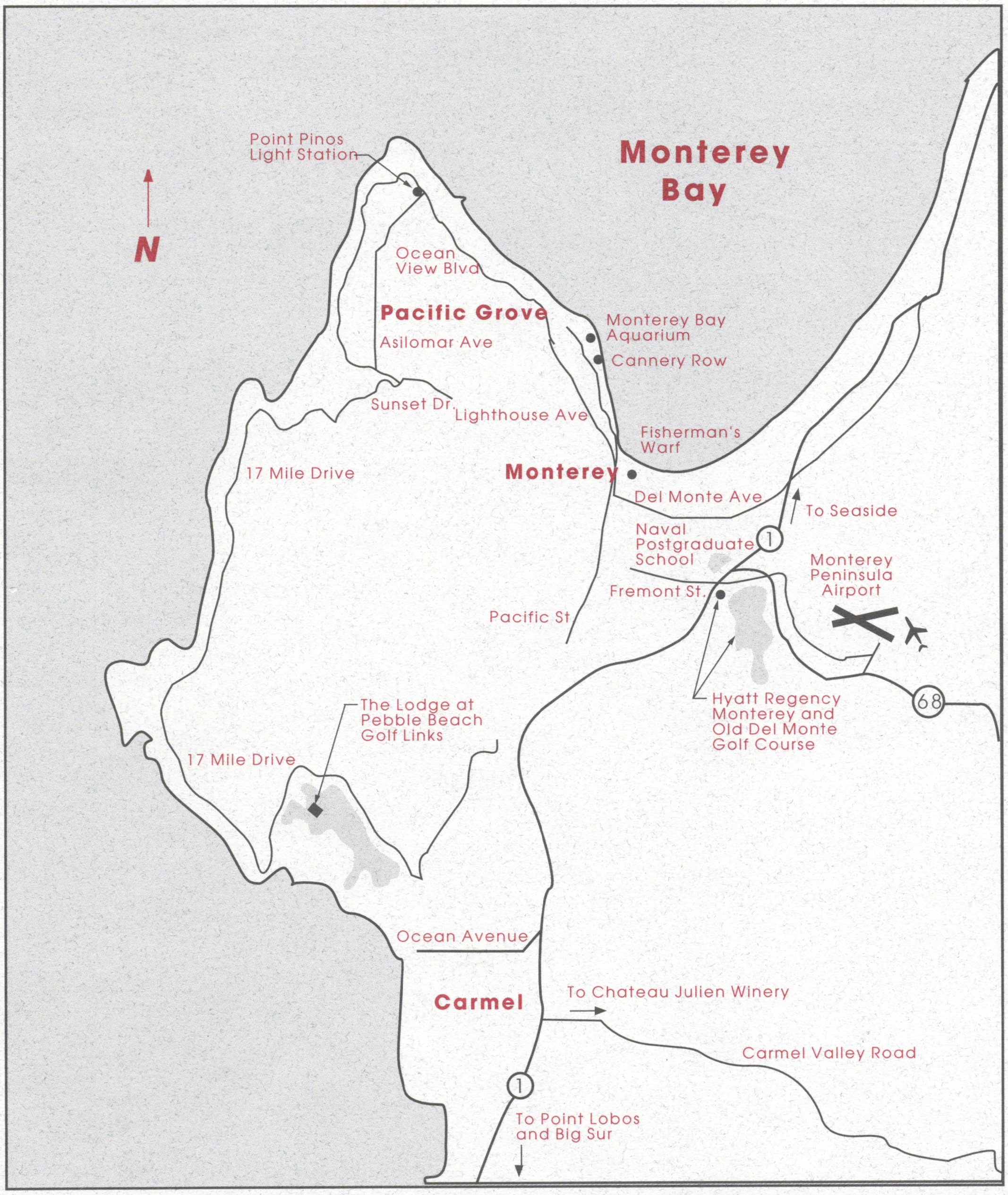
MILCOM '97
Booth 403.

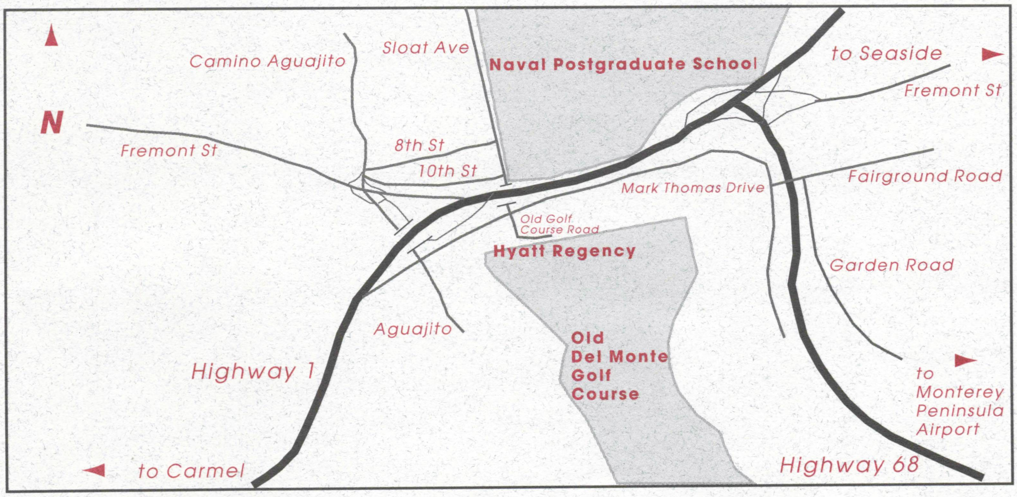
GTE

Monterey Area Map

Monterey Area


Monterey Bay
N
Point Pinos Light Station
Ocean View Blvd
Pacific Grove
Asilomar Ave
Monterey Bay Aquarium
Cannery Row
Sunset Dr
Lighthouse Ave
Fisherman's Warf
17 Mile Drive
Monterey
Del Monte Ave
To Seaside
1
Naval Postgraduate School
Monterey Peninsula Airport
Fremont St.
Pacific St
Hyatt Regency Monterey and Old Del Monte Golf Course
68
The Lodge at Pebble Beach Golf Links
17 Mile Drive
Ocean Avenue
Carmel
To Chateau Julien Winery
Carmel Valley Road
1
To Point Lobos and Big Sur

Monterey Freeway Access

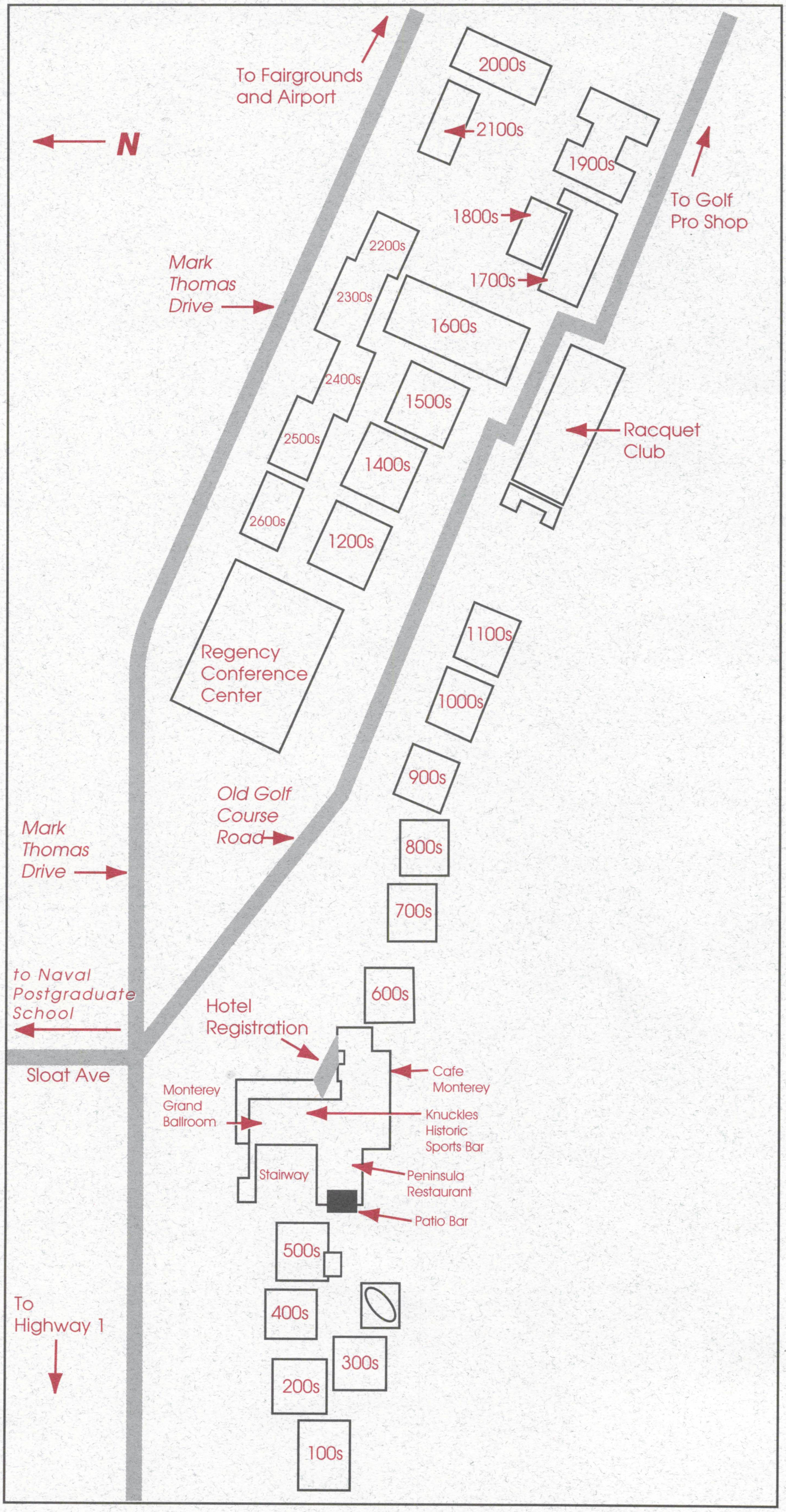

N
Camino Aguajito
Sloat Ave
Naval Postgraduate School
to Seaside
Fremont St
Fremont St
8th St
10th St
Mark Thomas Drive
Fairground Road
Old Golf Course Road
Hyatt Regency
Garden Road
Aguajito
Old Del Monte Golf Course
Highway 1
to Monterey Peninsula Airport
to Carmel
Highway 68

Conference Location Map

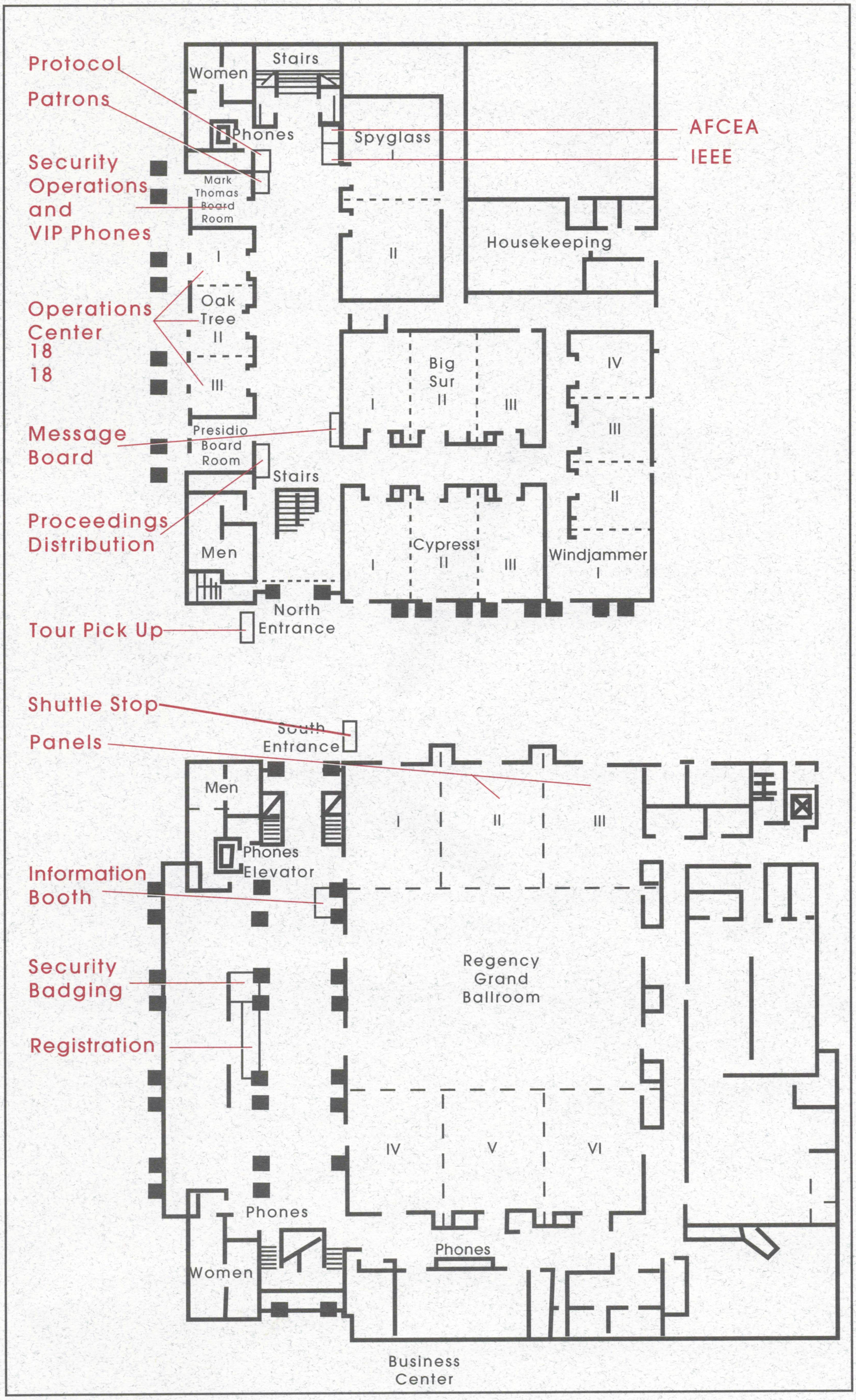
Hyatt Regency Monterey

Luncheons, unclassified sessions and panels, and the Chairman's Banquet are held in the Regency Conference Center. Shuttle pick-up and drop-off is also at the Conference Center.

Exhibits are displayed in the Monterey Grand Ballroom.


To Fairgrounds and Airport
N
2000s
2100s
1900s
To Golf Pro Shop
1800s
1700s
2200s
2300s
Mark Thomas Drive
1600s
2400s
1500s
2500s
1400s
Racquet Club
2600s
1200s
Regency Conference Center
1100s
1000s
900s
Old Golf Course Road
800s
Mark Thomas Drive
700s
to Naval Postgraduate School
600s
Hotel Registration
Sloat Ave
Cafe Monterey
Monterey Grand Ballroom
Knuckles Historic Sports Bar
Stairway
Peninsula Restaurant
Patio Bar
500s
400s
300s
200s
100s
To Highway 1

Hyatt Regency Conference Center Map


Protocol
Patrons
Security Operations and VIP Phones
Operations Center 18
18
Message Board
Proceedings Distribution
Tour Pick Up
Women
Stairs
Phones
Mark Thomas Board Room
Spyglass
I
II
AFCEA
IEEE
Housekeeping
I
Oak Tree
II
III
Big Sur
I
II
III
IV
III
II
Windjammer
I
Presidio Board Room
Stairs
Men
Cypress
I
II
III
North Entrance
Shuttle Stop
Panels
South Entrance
Men
Phones
Elevator
Information Booth
Security Badging
Registration
I
II
III
Regency Grand Ballroom
IV
V
VI
Phones
Women
Phones
Business Center

First Floor (lower)

Second Floor (upper)

Naval Postgraduate School

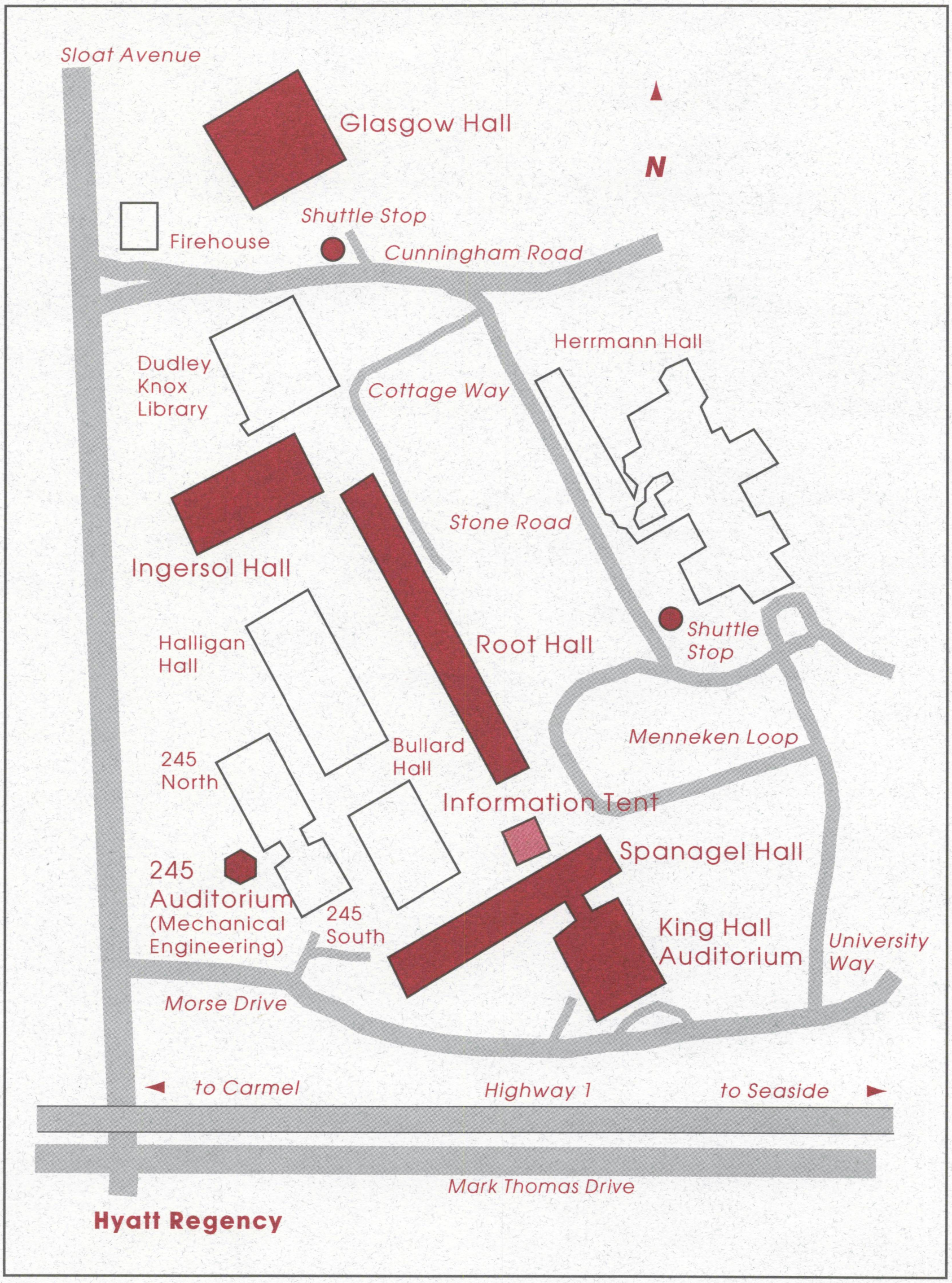
Photo: Naval Postgraduate School

Tutorials, classified panels, plenary session, classified sessions, and demonstrations, are held at the Naval Postgraduate School in the highlighted buildings on the map.

There is no Conference parking at the Naval Postgraduate School; please use shuttle service or walk.

Pay phones are provided in King Hall Auditorium, Ingersol Hall, and 245 Auditorium.

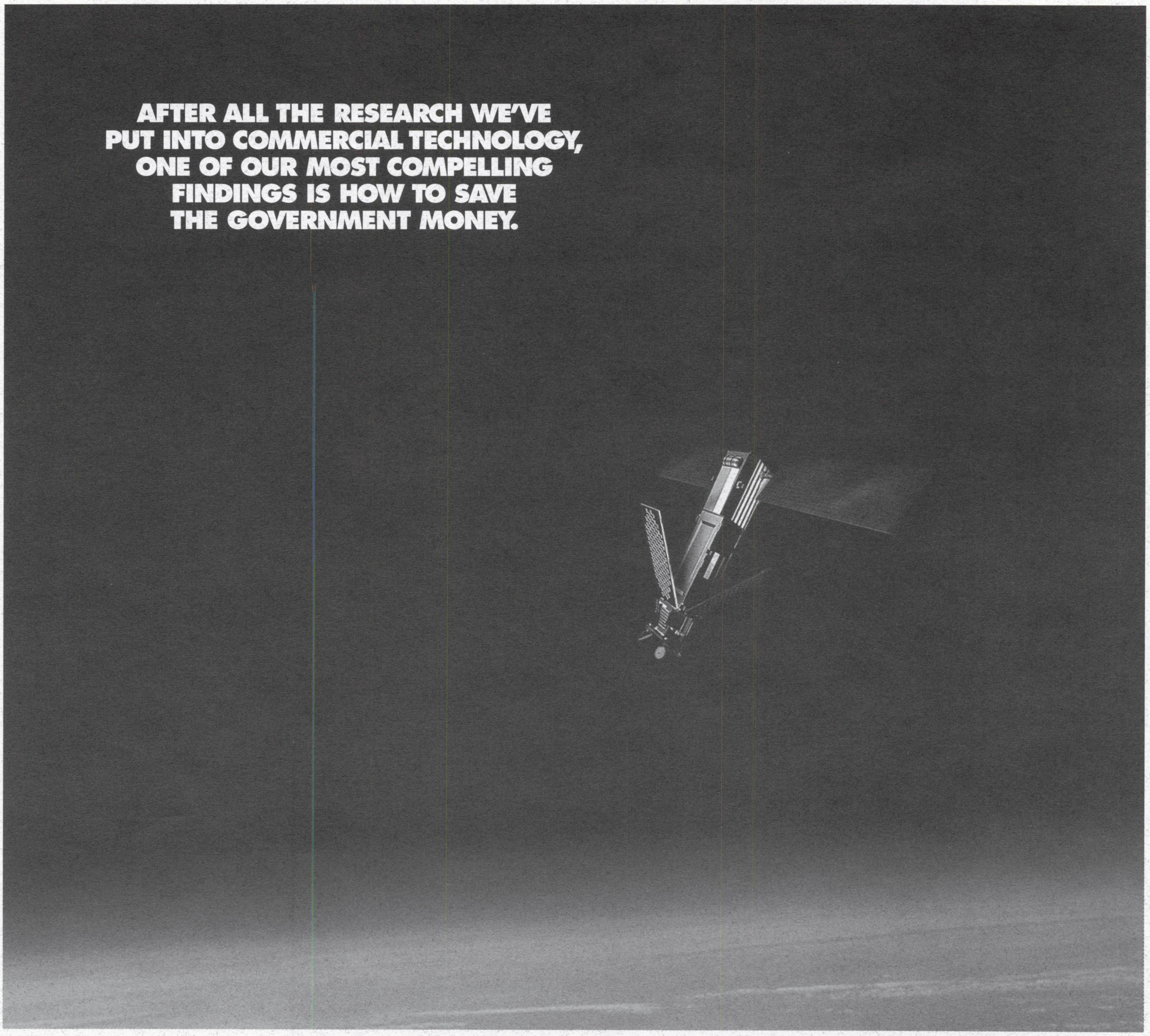
Refreshments are served at Ingersol Hall, 245 Auditorium, Glasgow Hall, and the Information Tent.



Sloat Avenue
N
Glasgow Hall
Shuttle Stop
Firehouse
Cunningham Road
Herrmann Hall
Dudley Knox Library
Cottage Way
Stone Road
Ingersol Hall
Halligan Hall
Root Hall
Shuttle Stop
Menneken Loop
245 North
Bullard Hall
Information Tent
Spanagel Hall
245 Auditorium (Mechanical Engineering)
245 South
King Hall Auditorium
University Way
Morse Drive
to Carmel
Highway 1
to Seaside
Mark Thomas Drive
Hyatt Regency

Harness the Power of Communications

LOCKHEED MARTIN


AFTER ALL THE RESEARCH WE'VE PUT INTO COMMERCIAL TECHNOLOGY, ONE OF OUR MOST COMPELLING FINDINGS IS HOW TO SAVE THE GOVERNMENT MONEY.

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Unclassified Panels

Hyatt Regency Conference Center

Global Information Infrastructure: Technology Trends

Monday
3 November

9:15 am – 12:15 pm
Hyatt Grand Ballroom
II and III

Lieutenant General David J. Kelley, United States Army, Director DISA

Lieutenant General Douglas D. Buchholz, United States Army, Director Command, Control, Communications, and Computer (C^4) Systems

Lieutenant General William J. Donahue, United States Air Force, Director Communications and Information, Headquarters, United States Air Force, and Commander Air Force Communications and Information Center

Major General Gerard P. Brohm, United States Army, Commanding General Communications–Electronics Command and Fort Monmouth, New Jersey

Peter G. Paulson, Chief, Defense Information System Network Operations Division, DISA

Ad-Hoc Wireless Networks

2:30 pm – 5:30 pm
Hyatt Grand Ballroom
II and III

Dr. Zygmunt Haas, Associate Professor, Cornell University

David B. Johnson, Assistant Professor, Carnegie Mellon University

Joseph P. Macker, Network Research Scientist, Naval Research Laboratory

Charles E. Perkins, Senior Staff Engineer, Sun Microsystems

Robert Ruth, PM GloMo, DARPA ITO

Paul F. Sass, Chief Engineer, United States Army CECOM

Jay W. Strater, The MITRE Corporation

International Military Satellite Communications

Tuesday
4 November

9:15 am – 12:15 pm
Hyatt Grand Ballroom
II and III

Gil J. Klinger, Acting Deputy Under Secretary of Defense for Space

Ingenieur General Jean-Pierre Rabault, Directeur, Des Systemes De Forces et de La Prospectives (DSP), Delegation General Pour L'Armement (DGA), France

Dr. Leroy Pearce, STA Defence CIO, National Defence Headquarters, Canada

MinDirig Klaus Hahnenfeld, MOD GE, Germany (invited)

Rear Admiral Vincenzo Ascoli, Chief IV Department, Secretary General for Defense and National Armaments Director, Ministry of Defense, Italy (invited)

Major General W.J.P. Robins, Director General Information and Communications Services, Ministry of Defence, United Kingdom (invited)

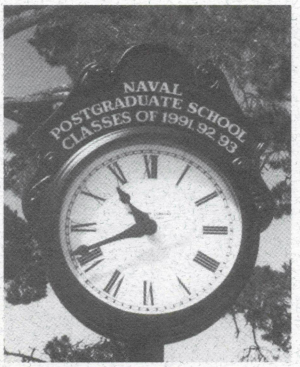


Photo: David Wickemeyer

**Tuesday
4 November**

***2:30 pm – 5:30 pm
Hyatt Grand Ballroom
II and III***

Broadband Communications: Application to the DoD

Karl Savatiel, Vice President, Lockheed Martin Telecommunications

William Brandon, The MITRE Corporation

Dr. Dale Harris, Director, Center for Telecommunications, Department of Electrical Engineering, Stanford University

Rick Kane, General Manager, Advanced Systems Division, Satellite Communications Systems Group, Motorola

Edward J. Patrick, Vice President, Hughes Communications, Inc.

John Pientka, Vice President, Advanced Systems Division, Satellite Communications Systems Group, Motorola

Emil Regard, Vice President, Marketing, Sales, and Business Development, Space Systems/Loral

Dell Williams, Teledesic Corporation

**Wednesday
5 November**

***9:15 am – 12:15 pm
Hyatt Grand Ballroom
II and III***

Technology War for High Speed Networking: DoD Applications

Dr. Raj Jain, Professor, Ohio State University

Dr. David Cheriton, Professor, Computer Science Department, Stanford University

Dr. Sudhir Dixit, Project Manager, Nokia Research Center

Douglas H. Hunt, Director, Product Technology and Standards, Fujitsu Nexion Inc.

Pradeep Samudra, Director, Broadband Systems, Samsung Telecommunications America

***2:30 pm – 5:30 pm
Hyatt Grand Ballroom
II and III***

Regulatory Issues of Telecommunications Reform

Diane Fountaine, Deputy Manager, National Communications System

Tom Barry, Senior Vice President, Federal Relations, SBC Communications, Inc.

Charles Shipp, Director, Law and Government Affairs, AT&T

Dr. Jack Oslund, Director of External Affairs, COMSAT Corporation

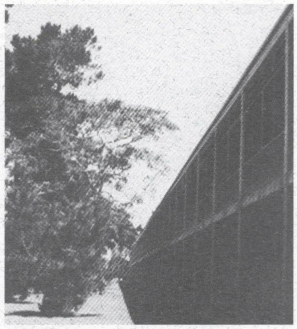


Photo: David Wickemeyer

can military use comm. links
sat TT&C must encryption
Best Stuff

Classified Panels

Naval Postgraduate School

satellite paging

Military Use of the Commercial Infrastructure

Monday
3 November

9:15 am – 12:15 pm
245 Auditorium

Ray Barker, Executive Director, Space Systems/Loral

Gordon Booker, Government Services Consultant, Teledesic Corporation - subout all work provide means to internet in sky

Dan Brophy, Director, Business Development Commercial Space, Lockheed Martin Missiles & Space

Stephen Carter, Principal Engineer, QUALCOMM, Inc. - Globalstar - telephone & paging

E. William Harding, Motorola Space and Systems Technology

Patrick M. Kern, Director, Advanced Communications Programs, Lockheed Martin Missiles & Space

Lee Murphy, Manager, Program Development, Globalstar LP

Bernard Vecerek, Vice President Engineering, PanAmSat - telephones data etc

Michael Trujillo, Senior Project Manager, PanAmSat

Dell Williams, Senior Member, Systems Engineering Staff, Teledesic Corporation

MILSATCOM Architectures for the 21st Century*

2:30 pm – 5:30 pm
King Hall Auditorium

Major General Robert S. Dickman, United States Air Force, Department of Defense Space Architect

Lieutenant General Douglas D. Buchholz, United States Army, Director Command, Control, Communications, and Computer (C^4) Systems

Lieutenant General Roger D. DeKok, United States Air Force, Commander, Space and Missile Systems Center, Los Angeles Air Force Base

Lieutenant General David J. Kelley, United States Army, Director Defense Information Systems Agency

Gil Klinger, Acting Deputy Under Secretary of Defense for Space

Anthony M. Valletta, Acting Assistant Secretary of Defense (C^3I)

Major General John L. Woodward, Jr., United States Air Force, United States Space Command, Peterson Air Force Base

Tactical Service Interoperability (Standards and Practice)

Tuesday
4 November

9:15 am – 12:15 pm
245 Auditorium

James Soos, Deputy Assistant Secretary of Defense for Command, Control, and Communications

Colonel John Bouldry, United States Marine Corps, Deputy Chief Information Officer

Brigadier General Peter M. Cuviello, United States Army, Director, Programs and Architecture, Headquarters, Department of the Army

Lieutenant General William J. Donahue, United States Air Force, Director, Communications and Information, AF/SC, and Commander Air Force Communications and Information Center

Rear Admiral Robert Nutwell, United States Navy, Deputy Director, Space Information Warfare, Command and Control

No briefcases, portfolios, electronic recording devices, cameras, photography, computing equipment, cellular phones, or note taking is permitted at the classified sessions.

** Open to both classified and unclassified session attendees*

Classified Panels

Naval Postgraduate School

Tuesday 4 November

2:30 pm – 5:30 pm
245 Auditorium

Global Command and Control System

Brigadier General Gary Salisbury, United States Air Force, Defense Information Systems Agency/D6

Dawn Harley, Defense Information Systems Agency/JEXF

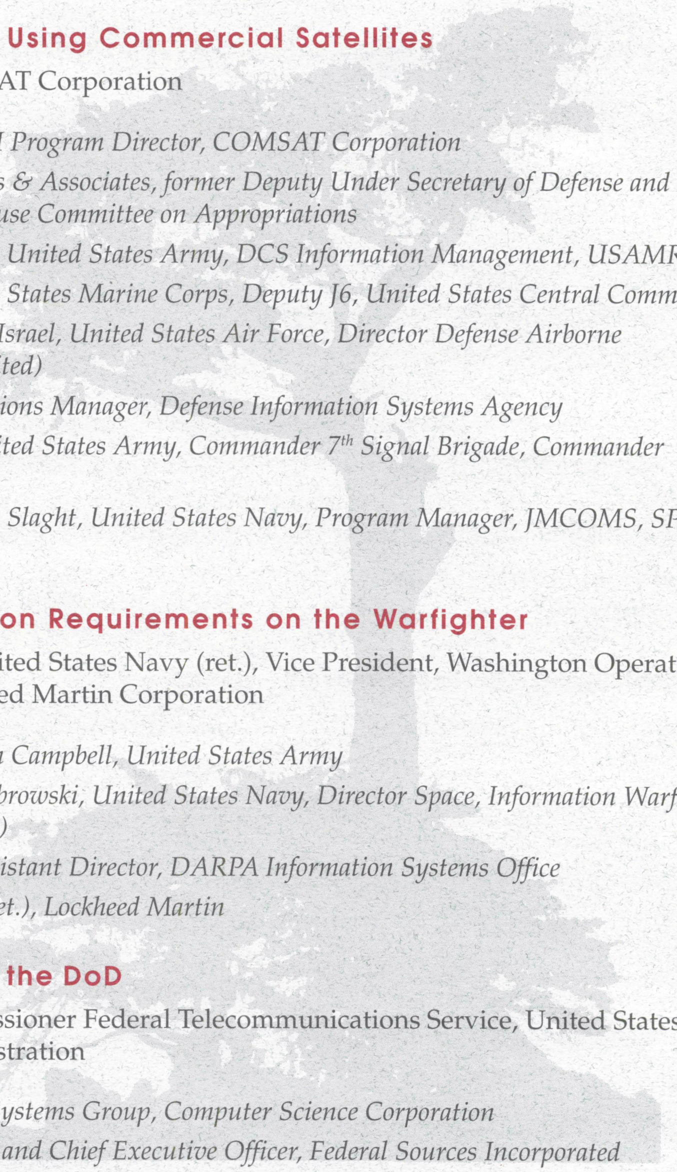
Brigadier General Stephen E. Kelley, United States Air Force, United States Transport Command/TCJ6

Dr. Frank A. Perry, Defense Information Systems Agency/D6

Brigadier General Harry D. Raduege, United States Air Force, United States Central Command/CCJ6

Lieutenant Colonel (p) Harry Gordon Thigpen, United States Army, Command Systems Operations Division, Joint Staff/J3/J33

Colonel Philip Yff, United States Marine Corps, Joint Staff–Logistics Directorate



2:30 pm – 5:30 pm
Ingersol Hall–Room 122

Military Operations Using Commercial Satellites

Dr. Allen Dayton, COMSAT Corporation

Stephen J. Adelmann, CSCI Program Director, COMSAT Corporation

Robert V. Davis, R.V. Davis & Associates, former Deputy Under Secretary of Defense and Professional Staff of the House Committee on Appropriations

Colonel Gary Gilbert, PhD, United States Army, DCS Information Management, USAMRMC

Colonel Tim Himes, United States Marine Corps, Deputy J6, United States Central Command

Major General Kenneth R. Israel, United States Air Force, Director Defense Airborne Reconnaissance Office (invited)

Dr. Pravin Jain, D3 Operations Manager, Defense Information Systems Agency

Colonel Larry Klooster, United States Army, Commander 7th Signal Brigade, Commander Operation Prime Time

Rear Admiral (sel) Kenneth Slaght, United States Navy, Program Manager, JMCOMS, SPAWAR (invited)

Wednesday 5 November

9:15 am – 12:15 pm
245 Auditorium

Impact of Information Requirements on the Warfighter

Admiral Stan Arthur, United States Navy (ret.), Vice President, Washington Operations, Electronic Sector, Lockheed Martin Corporation

Lieutenant General William Campbell, United States Army

Vice Admiral Arthur K. Cebrowski, United States Navy, Director Space, Information Warfare Command and Control (N6)

Dr. Robert J. Douglass, Assistant Director, DARPA Information Systems Office

Colonel John Williamson (ret.), Lockheed Martin

2:30 pm – 5:30 pm
245 Auditorium

Turnkey Services for the DoD

Robert J. Woods, Commissioner Federal Telecommunications Service, United States General Services Administration

Milton Cooper, President, Systems Group, Computer Science Corporation

Tomas L. Hewitt, President and Chief Executive Officer, Federal Sources Incorporated

George C. Newstrom, Corporate Vice President and Group Executive, Electronic Data Systems

Emmett Paige, Jr., Chief Operation Officer, OAO Corporation

Ken Pedersen, Vice President Government Markets, AT&T

Charles Self, Assistant Commissioner, Office of Information Technology Integration, United States General Services Administration

Dr. Daniel F. Wiener, II, Vice President, Advanced Programs, Unisys

No briefcases, portfolios, electronic recording devices, cameras, photography, computing equipment, cellular phones, or note taking is permitted at the classified sessions.

Turbo Codes and Applications

Monday, 3 November—9:15 am to 12:15 pm

Dr. Dariush Divsalar, Jet Propulsion Laboratory, California Institute of Technology

The recently proposed turbo codes now represent a genuine, and perhaps historic, breakthrough in channel coding. They are made from two simple convolutional codes separated by an interleaver. Turbo codes have astonishing performance close to the Shannon limit, yet only require a simple low complexity iterative decoding algorithm. This tutorial addresses the fundamentals of turbo codes and the iterative decoding scheme. It provides an understanding of the principles governing the code behavior and guidelines in designing turbo code for various throughputs and modulations. The implementation of turbo decoder by using the Add-Compare-Select operations similar to that used in the implementation of Viterbi decoder will be discussed. Extensions of turbo coding to other forms of concatenation with interleavers, such as serial concatenation, will be addressed. Applications of turbo codes to various types of data communication systems will be presented.

Communication Network Modeling and Simulation

Monday, 3 November—2:30 pm to 5:30 pm

Dr. Guy Omidyar, Illinois Institute of Technology, Research Institute and Dr. Khosrow Sohraby, University of Missouri

This tutorial provides a thorough coverage of ATM network basic principles. It covers the fundamental issues of both architecture and performance of ATM Networks. The ATM layer architecture will be discussed; physical layer, ATM layer, and ATM adaption layer (ALL) will be carefully examined. Congestion and flow control, traffic engineering, and correlated source and their modeling and simulation will be covered. This tutorial will identify the theoretical and actual problems that face designers of today's complex problems associated with wired and wireless ATM networks and mobility management. Topics covered include system modeling and validation, efficient approximations, algorithmic techniques, design optimization, end-to-end performance modeling, and traffic characterization in wired networks. Detailed simulation case studies will be discussed.

Fading Channels: Characterization and Mitigation

Tuesday, 4 November—9:15 am to 12:15 pm

Dr. Bernard Sklar, Communications Engineering Services

This tutorial addresses Rayleigh fading, primarily in the UHF band, that affects mobile digital communication systems. The major elements that contribute to the two types of dispersive fading (large-scale and small-scale) are characterized. Two fading manifestations (signal dispersion and fading rapidity) are examined from two points of view: time and frequency. Two degradation categories are defined for signal dispersion: frequency-selective fading and flat-fading. Two degradation categories are defined for fading rapidity: fast fading and slow fading. We present a model of the fading phenomena that yields a nice symmetry for helping view the underlying relationship of fading channels. Mitigation techniques for ameliorating the effects of each degradation category are treated, and methods that have been implemented in two different mobile communication systems are illustrated.

Mobility Management in TCP/IP Networks

Tuesday, 4 November—2:30 pm to 5:30 pm

Dr. Zygmunt Haas, Cornell University

Stimulated by the vision of Personal Communication Services and by the advances in hardware miniaturization, the field of wireless and mobile networking hints on its enormous technological, scientific, and commercial potential. Thus, it is predicted that the wireless and mobile technology coupled with the TCP/IP networks, in general, and the Internet, in particular, will massively affect the work and the entertainment habits of the Information Highway users.

This tutorial addresses the issues related to mobility support in TCP/IP networks. We start by overviewing the mobile communication networks and the TCP/IP protocol suite. Then we proceed by investigating the various approaches to mobile IP, especially concentrating on the Internet Engineering Task Force (IETF) Working group (RFC 2002). We follow with the comparison of the IETF mobile IP with the Cellular Digital Packet Data (CDPD). Further, we discuss the effects of mobility on the transport-layer protocols and outline some of the proposed solutions.

Video Teleconferencing and Multimedia Communications

Wednesday, 5 November—9:15 am to 12:15 pm

Dr. Nader Mehravari, Lockheed Martin Federal Systems

Over the past few years, there has been much technical progress and standards activities in the area of video teleconferencing and related multimedia communications. Advancements in compression technology and high-speed networks, and new standards specifications have fueled the development of video teleconferencing and realtime collaborative multimedia solutions. This tutorial is designed to introduce the audience to a wide range of topics related to video teleconferencing and multimedia communications, including the benefits and applications both in military and civilian environments. Then, an overview of the key technical components such as speech coding and video compression will be provided. Coverage will include standards activities of H, G and T-series, desktop video conferencing issues (e.g., collaborative environment and interoperability), and video conferencing system design and implementation approaches. A brief discussion on the existing products will be included.

Traffic Management in ATM Networks

Wednesday, 5 November—2:30 pm to 5:30 pm

Dr. Anujan Varma, University of California, Santa Cruz

This tutorial focuses on the mechanisms and protocols necessary to support Quality-of-Service (QoS) guarantees for integration of multiple traffic types in ATM networks. It begins with an introduction to the various types of traffic and their requirements, and the mechanisms for QoS support in ATM networks. Various protocols and algorithms needed for supporting QoS in ATM networks will be reviewed. Topics include: traffic scheduling, traffic shaping, policing, admission control, congestion control, signaling, and routing. Some of the challenges of ATM traffic management will be discussed.

Session 1 Coding

Monday
3 November
9:15 am – 12:15 pm
Spyglass I

Chair Dr. Paul Crepeau, Naval Research Laboratory
Sponsor IEEE Technical Committee on Information Infrastructure

1.01 Turbo Code Concepts Made Easy or How I Learned to Concatenate and Reiterate
Dr. Bernard Sklar, Communications Engineering Services

1.02 Sequential Decoding of Reed-Solomon Codes in an Incremental Redundancy System
Laurie L. Joiner, Clemson University and John J. Komo, Clemson University

1.03 Turbo Codes for Coherent FH-SS with Partial Band Interference
Joseph H. Kang, University of Michigan and Wayne E. Stark, University of Michigan

1.04 The Performance Enhancement of Severely Impaired Unguided Laser Communication Systems Using Turbo Codes
Karman Kiasaleh, University of Texas at Dallas

1.05 Performance Comparison of Hermitian and Reed-Solomon Codes
Bruce E. Wahlen, Naval Command, Control and Ocean Surveillance and Jesus Jimenez, Point Loma Nazarene College

1.06 Dwell-Interval Retransmissions for Frequency-Hop Communication Systems
Justin P. McNew, Clemson University and Professor Carl W. Baum, Clemson University

1.07 Soft Decoding of BCH Codes Applied to Multilevel Modulation Codes for Rayleigh Fading Channels
Fabien Buda, Alcatel TELSPACE, France, Juing Fang, Alcatel TELSPACE, France, and Phillippe Sehier, Alcatel TELSPACE, France

1.08 A Simple Scheme to Evaluate Periodic Correction Values for m-Sequences in GF(p)
Alois M. J. Goiser, Technical University, Vienna, Austria and Johannes Philipp, Technical University, Vienna, Austria

1.09* Trellis Extracted Synchronisation Techniques Applicable to Automatic Link Establishment
Bernard Hunt, University of Lancaster, United Kingdom, Bahram Honary, University of Lancaster, United Kingdom, Mel Maundrell, Defence Research Agency, United Kingdom, and Paul Arthur, Defence Research Agency, United Kingdom

1.10* Asymptotic Performance of Nonrepetitive and Repetitive Turbo Codes
Charles C. Wang, The Aerospace Corporation

Session 2 Nonlinear Processing and Interference Rejection

9:15 am – 12:15 pm
Cypress III

Chair Dr. James Bond, SAIC
Sponsor IEEE Technical Committee on Information Infrastructure

2.01 Improved Detection in Correlated Impulsive Noise Using Wavelet Denoising
S. Burley, University of Leeds, United Kingdom, M. Darnell, University of Leeds, United Kingdom, C. Prowse, Defence Research Agency, United Kingdom, and R. Chandler, Defence Research Agency, United Kingdom

2.02 Use of Mathematical Programming to Optimize Effectively-Memoryless Bandpass Nonlinearities
X. T. Vuong, Science Applications International Corporation and S. T. Vuong, University of British Columbia, Canada

2.03 AJ Performance of a Family of Self-Normalized Diversity Combiners
Thomas Eng, The Aerospace Corporation

2.04 Progress on the Frequency Independent Strong Signal Suppressor (FISSS)
David Sychaleun, Communications Research Centre, Ottawa, Canada, Barry Felstead, Communications Research Centre, Ottawa, Canada, and Gilbert A. Morin, Defence Research Establishment, Ottawa, Canada

2.05 Threshold Synchronization of the Adaptive Interference Reduction Scheme in Low Complexity Digital Direct-Sequence Spread Spectrum Receivers
Dr. Alois M. J. Goiser, Technical University, Vienna, Austria

** Not presented; included in proceedings*

Monday
3 November

2.06 Performance Analyses of the Power-Domain Kernel Adaptive Locally Optimum Processor (ALOP) Against Interference Waveforms with Continuous Power Density
Hank Schmidt, Technology Service Corporation and James W. Bond, Science Applications International Corporation

2.07 The General Power Variance Method for Direction Finding
J. W. Bond, Science Applications International Corporation and Stefen Hui, San Diego State University

2.08 Narrow-Band Interference Rejecting Using Transform Domain Signal Processing in a Hybrid FH/DS Spread Spectrum System
Timo Kumpumaki, University of Oulu, Finland, Matti A. Isohookana, University of Oulu, Finland, and Juhani Juntti, Finnish Air Force Headquarters, Finland

2.09* Theoretical Performance of the Non-Coherent AIR-Receiver
Dr. Alois M. J. Goiser, Technical University, Vienna, Austria

2.10* Hybrid Spread Spectrum Signal Acquisition in the Presence of Worst Case Multitone Jamming
Siew-Kee Loh, Defense Science Organization, Singapore

9:15 am – 12:15 pm
Cypress I, II

Session 3 Cellular and PCS Advances

Chair Phil Bowman, Globalstar
Sponsor MILCOM 97

3.01 Doppler Based Multiple Access (DBMA): A Novel Flow Control Mechanism for LEO Satellite Systems
Irfan Ali, General Electric Corporate Research and Development, Naofal Al-Dhahir, General Electric Corporate Research and Development, John E. Hershey, General Electric Corporate Research and Development, Gary J. Saulnier, RPI, and Robert Nelson, General Electric Americom Communications Incorporated

3.02 The Effect of Mobile Velocity on a Communication System Operating Over Multipath Fading Channels
Michael J. Chu, University of Michigan and Wayne E. Stark, University of Michigan

3.03 A New Priority Policy for Channel Assignment in PCS Networks
Suresh Sridhar, Naval Postgraduate School and Keebom Kang, Naval Postgraduate School

3.04 Communication Performance Simulation for the Asia Cellular Satellite System
Maryanne T. Schiavoni, Lockheed Martin Management and Data Systems

3.05 Performance Analysis of Multi-tier Asynchronous M-PSK DS/CDMA Systems with a Nonlinear Amplifier
Pen Li, University of Maryland and Evaggelos Geraniotis, University of Maryland

3.06 Functional Decomposition, the Key to Globalstar Design
Edward Hirshfield, Globalstar

9:15 am – 12:15 pm
Big Sur I, II, III

Session 4 MILSATCOM and Interoperability

Chair Lieutenant Colonel Greg Evans, United States Army
Sponsor MILCOM 97

4.01 Simulation-Based Performance Evaluation of Resource Allocation Algorithms for Implementation in the SHF-DAMA Satellite Network
Eric P. Hobson, Air Force Institute of Technology, Captain Richard A. Raines, Air Force Institute of Technology, T. Glen Bailey, Air Force Institute of Technology, and David M. Gallagher, Air Force Institute of Technology

4.02 Multicarrier Demultiplexing and Demodulation for an MDR Frequency Hopped Satcom System: Simulation Analysis
Grimault Christophe, DGA CELAR, France

4.03 ATM Packet Switching for Airborne/Space Payloads
G. Bivens, Rome Laboratory, A. Lee, Systems and Processes Engineering Corporation, and D. Gibson, Systems and Processes Engineering Corporation

** Not presented; included in proceedings*

4.04 Compatibility of DoD Satellite Communications Standards with International Civil Standards
John Muhonen, The MITRE Corporation

4.05 An Integrated Management System for DoD Communications Networks Using Military and Commercial Satellites
Hari Bezwada, United States Army Communications Electronics Command, William L. Cook, COMSAT Laboratories, Martin P. Brown, Jr., COMSAT Laboratories, and Deborah D. Opiekun, COMSAT Laboratories

Session 5 Commercial and Tactical Internet

***9:15 am – 12:15 pm
Windjammer I, II***

Chair Scott Corson, University of Maryland
Sponsor IEEE Technical Committee on Tactical Communications

5.01 A Reliable Transport Protocol for the Tactical Internet
Jay W. Strater, The MITRE Corporation

5.02 The Performance of TCP in a Tactical Internet
Y. J. Liu, ITT Aerospace/Communications Division

5.03 A Common Tactical Internet Performance Model Architecture
Geoffrey R. Kelsch, Hughes Aircraft Company

5.04 Traffic Congestion Measurements in Transit IP Networks
Tim Bass, Science Applications International Corporation

5.05 Discrete-Event Simulation on the Web
Chien-Chung Shen, Bellcore

5.06 Simulation Studies of MAC Algorithms for Combat Net Radio
Dr. David Thuente I, Indiana University-Purdue University, Fort Wayne and Timothy E. Borchelt, Hughes Defense Communications

5.07 CUITN Reference and Sustainment Training
Robert Schiffl, Booz•Allen & Hamilton Inc. and Jaime Velez, Booz•Allen & Hamilton Inc.

Session 6 Application of Video and Multimedia Communications to the DoD

***9:15 am – 12:15 pm
Windjammer III, IV***

Chair Dr. Nader Mehravari, Lockheed Martin Federal Systems
Sponsor IEEE Technical Committee on Computer Communications

6.01 An Overview of Videoconferencing Technology
Grant Paul, Jr., The MITRE Corporation

6.02 Status of Standards for Teleconferencing and Multimedia Communication
Richard A. Schaphorst, Delta Information Systems

6.03 Military and Civilian Applications of Virtual Co-Location and Collaborative Environments and Associated Technologies
Shirley Kupst, Lockheed Martin Federal Systems, Dr. Nadar Mehravari, Lockheed Martin Federal Systems, Mark Olson, Lockheed Martin Federal Systems, and Scott Rush, Lockheed Martin Federal Systems

6.04 Desktop Video Conferencing Collaborative Technology for Planning Satellite Based Communications
A. Bordetsky, California State University, Hayward and F. Simcox, Armstrong Laboratory, United States Air Force

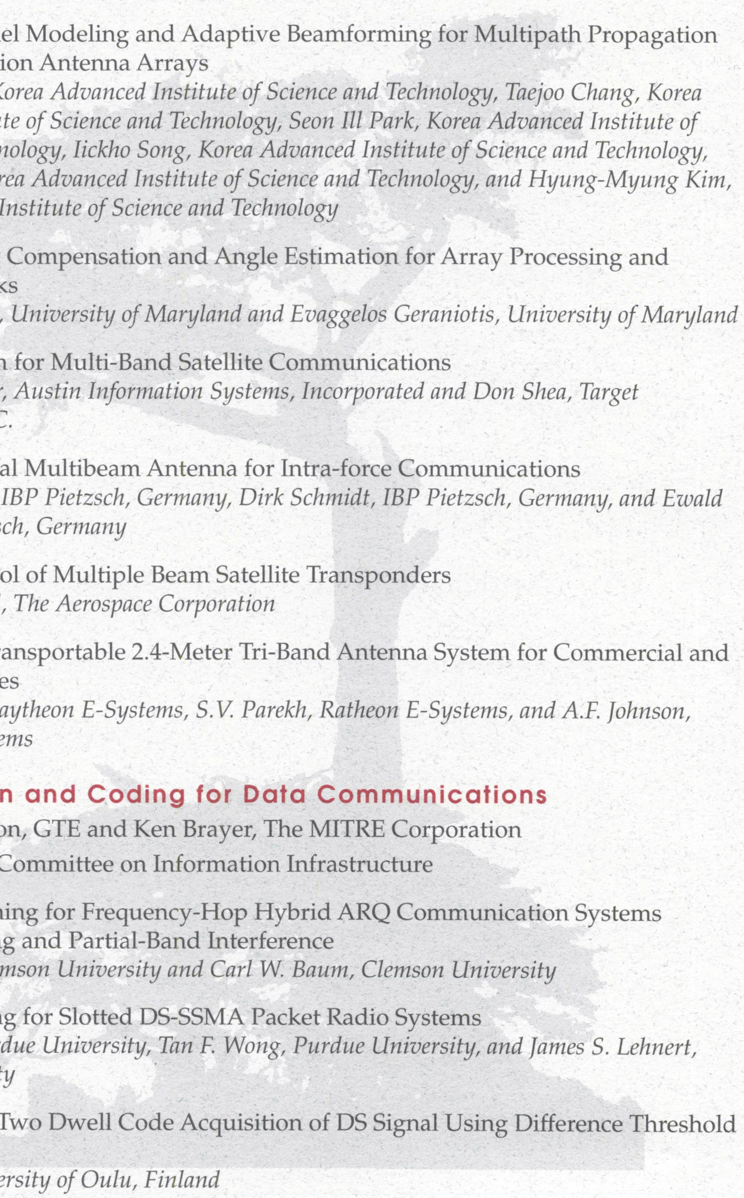
6.05 Extension of Secure Audio and Video Data from the NTC Through the Public Switched Telephone Network
P. Michael Main, Raytheon E-Systems

6.06 Advanced Commercial-Off-The-Shelf Technology for Joint Task Force DISN Deployed Multimedia Communications (JDDMC)
Dr. Syed A. Shah, Defense Information Systems Agency, Terry Armstrong, Logicon Incorporated, and Dr. Savvas Hadjipanteli, Defense Information Systems Agency

Monday
3 November

6.07 Transmission of MPEG-2 Video Streams Over ATM Networks
Arianne Lewis, GTE Laboratories Incorporated, Steven Gringeri, GTE Laboratories Incorporated, Bhumip Khasnabish, GTE Laboratories Incorporated, and Bert Basch, GTE Laboratories Incorporated

6.08* Reliable Multicast Protocol Design Choices
David G. Petitt, Headquarters, United States Marine Corps



9:15 am – 12:15 pm
Spyglass II

Session 7 Phased Arrays and Advanced Antennas

Chair Dr. Geoffrey White, Boeing
Sponsor MILCOM 97

7.01 The Analysis of Distribution of the Current in the Slender Cylindrical Antenna
Ireneusz Kubiak, Military Communications Institute, Poland

7.02 Earth-Coverage Beams from Geosynchronous Active Transmit Phased Arrays
David A. Ksienski, The Aerospace Corporation

7.03 A Vector Channel Modeling and Adaptive Beamforming for Multipath Propagation Using Base-Station Antenna Arrays
Suk Chan Kim, Korea Advanced Institute of Science and Technology, Taejoo Chang, Korea Advanced Institute of Science and Technology, Seon Ill Park, Korea Advanced Institute of Science and Technology, Iickho Song, Korea Advanced Institute of Science and Technology, Min Sou Lee, Korea Advanced Institute of Science and Technology, and Hyung-Myung Kim, Korea Advanced Institute of Science and Technology

7.04 Joint Frequency Compensation and Angle Estimation for Array Processing and FHMA Networks
Shang-Chieh Liu, University of Maryland and Evaggelos Geraniotis, University of Maryland

7.05 Antenna System for Multi-Band Satellite Communications
Mark G. Cavalier, Austin Information Systems, Incorporated and Don Shea, Target Microwave, L.L.C.

7.06 A New Bi-conical Multibeam Antenna for Intra-force Communications
Dieter J. Cichon, IBP Pietzsch, Germany, Dirk Schmidt, IBP Pietzsch, Germany, and Ewald Gobel, IBP Pietzsch, Germany

7.07* Adaptive Control of Multiple Beam Satellite Transponders
Robert B. Dybdal, The Aerospace Corporation

7.08* Light-Weight Transportable 2.4-Meter Tri-Band Antenna System for Commercial and Military Satellites
J.R. Cleveland, Raytheon E-Systems, S.V. Parekh, Ratheon E-Systems, and A.F. Johnson, Raytheon E-Systems

2:30 pm – 5:30 pm
Spyglass I

a bunch of engineering Jibberish

Session 8 Detection and Coding for Data Communications

Chairs Arnie Michaelson, GTE and Ken Brayer, The MITRE Corporation
Sponsor IEEE Technical Committee on Information Infrastructure

8.01 Symbol Combining for Frequency-Hop Hybrid ARQ Communication Systems Subject to Fading and Partial-Band Interference
Fred J. Block, Clemson University and Carl W. Baum, Clemson University

8.02 Adaptive Coding for Slotted DS-SSMA Packet Radio Systems
Qian Zhang, Purdue University, Tan F. Wong, Purdue University, and James S. Lehnert, Purdue University

8.03 Comparison of Two Dwell Code Acquisition of DS Signal Using Difference Threshold Setting Rules
Jari Iinatti, University of Oulu, Finland

8.04 Performance of Non Coherent N-DPSK Receivers with Convolutional Coding Under Additive White Gaussian and Partial Band Noise Jamming for a MDR Frequency Hopping System
Philippe Bataille, DGA/CELAR, France and Gaston Levannier, DGA/CELAR, France

** Not presented; included in proceedings*

8.05 Performance Bounds for Multiple Tone Interference of Frequency-Hopped Noncoherent MFSK Systems
George Katsoulis, Naval Postgraduate School and R. Clark Robertson, Naval Postgraduate School

8.06 Tight approximation of bit error probability for L-diversity non-coherent M-ary FSK frequency hopping system with binary convolutional code and soft Viterbi decoder: diversity, bit interleaver size and Reed-Solomon outer code effects analysis on receiver performance for M=8
M. Testard, DGA/CELAR, France, J.C. Nivelet, DGA/CELAR, France, T. Matos, DGA/CELAR, France, and G. Levannier, DGA/CELAR, France

8.07 Comparative Analysis of Conventional and Multiuser Detectors in Multisensor Receivers
Markku J. Juntti, University of Oulu, Finland and Jorma O. Lilleberg, Nokia Mobile Phones, Finland

8.08* Concatenated Convolutional Codes for Digital Communications
Lenny Sheet, Lockheed Martin

Session 9 Modeling and Simulation

2:30 pm - 5:30 pm
Spyglass II

Chair Dr. Eric Christensen, Motorola
Sponsor IEEE Technical Committee on Tactical Communications

9.01 Virtual Prototyping for Mobile Distributed Wireless Terrestrial Communications Systems and Network
Eric Christensen, PhD, Motorola, Margaret Ennis, Motorola, and Charlene Todd, Motorola

9.02 Transmission Modeling of Military and Commercial Satellite Systems
Ahsun H. Murad, COMSAT Laboratories, Manish R. Parikh, COMSAT Laboratories, William A. Sandrin, COMSAT Laboratories, and Gerald J. P. Lo, COMSAT Laboratories

9.03 Fast Propagation Predictions for HF Network Simulations
Eric E. Johnson, New Mexico State University

9.04 A Model for HF Spectral Occupancy in Central Australia
D. John Percival, Defence Science and Technology Organisation, Australia, Miro Kraetzl, Defence Science and Technology Organisation, Australia, and Matthew S. Britton, Defence Science and Technology Organisation, Australia

9.05 A Model of High Frequencies (H.F.) Channel Used to Design a Modem of 9600 bits/s rate in 3kHz of Bandwidth
Michel Leconte, University of Rennes I, France and Marc Testard, University of Rennes I, France

9.06 Metrics for Characterizing Radio Links in a Frequency-Hop Packet Radio Network
Michael B. Pursley, Clemson University, Harlan B. Russell, Techno-Sciences Incorporated, and Jeffrey Wysocarski, Clemson University

9.07 Communications Realism in C4ISR Modeling and Simulation in a Distributed Simulation Environment
Joseph Lacetera, The MITRE Corporation, Jon McConnell, The MITRE Corporation, and John Roberts, The MITRE Corporation

9.08* End of Wargames Criteria for the META Model Constraint Removal Protocol: The Intersection of Self Organized Criticality, Self Similarity and Wavelet Theory
Dr. Carol A. Niznik, NW Systems

Session 10 Information Management and Distribution

2:30 pm - 5:30 pm
Windjammer I, II

Chair Colonel Charles Cornell, United States Air Force, Rome Laboratory
Sponsor MILCOM 97

10.01 Fast Asymmetric Internet Over Wireless Satellite-Terrestrial Networks
J.S. Baras, University of Maryland, S. Corson, University of Maryland, S. Papademetriou, University of Maryland, I. Secka, University of Maryland, and N. Suphasindhu, University of Maryland

* *Not presented; included in proceedings*

Monday
3 November

10.02 Theater Wideband Communications
H.H. (Sam) Khatib, Boeing Defense and Space Group

10.03 Integrated Management of Large Satellite-Terrestrial Networks
J.S. Baras, University of Maryland, M. Ball, University of Maryland, N. Roussopoulos, University of Maryland, K. Jang, University of Maryland, K. Stathatos, University of Maryland, and J. Valluri, University of Maryland

10.04 Advanced Data Extraction and Preparation via TIPSTER (ADEPT)
John Kielty, Lockheed Martin Management and Data Systems, Jose Franco, Lockheed Martin Management and Data Systems, and Ira Sider, Lockheed Martin Management and Data Systems

10.05 Autonomous Tactical Communications—Possibilities and Problems
Lars Ahlin, National Defence Research Establishment, Eva Englund, National Defence Research Establishment, Christian Jonsson, National Defence Research Establishment, Ingrid Soderquist, National Defence Research Establishment, Jens Zander, National Defence Research Establishment, and Gerald Q. Maguire, Royal Institute of Technology, Sweden

2:30 pm - 5:30 pm
Cypress III

Session 11 Communications Relays

Chair Richard Mouldin, L-3 Communications
Sponsor MILCOM 97

11.01 Airborne Communications Node Risk Reduction Strategy
Thomas H. McKinney, L-3 Communications, Clifford T. Johnson, L-3 Communications, and Richard B. Mouldin, L-3 Communications

11.02 UAV Communications Payload Development
Major Frank Pinkey, United States Army CECOM, Dan Hampel, Booz•Allen & Hamilton Inc., Stef DiPierro, Booz•Allen & Hamilton Inc., Brian S. Abbe, Jet Propulsion Laboratory, and Michael Sheha, Jet Propulsion Laboratory

11.03 Estimation of TDMA and CDMA Capacities for an Air-to-Ground Communication System
David W. Matolak, The MITRE Corporation and Steven L. Smith, The MITRE Corporation

11.04 Joint Tactical Information Distribution System (JTIDS)/Multi-Link Test Device (MLTD) Laboratory Environment Test System
Fred Goldstein, Dynamics Research Corporation and Martin McDonough, Dynamics Research Corporation

11.05 Approach to a Common Solution for The Family of Interoperable Range System Transceivers (FIRST)
K.F. Eggertson, Naval Air Warfare Center, A. Cirineo, Naval Air Warfare Center, A. G. Cameron, TASC Incorporated, and J.R. Cleveland, Raytheon E-Systems

11.06* Tactical Digital Information Link (TADIL) J Range Extension (JRE)
Barry W. Davis, Nichols Research Corporation, Cecil Graham, Nichols Research Corporation, David Stamm, Nichols Research Corporation, and Chris Parker, Nichols Research Corporation

2:30 pm - 5:30 pm
Big Sur I, II, III

Session 12 Architecture and Protocols 1

Chair Dr. William Goodhue, Lockheed Martin Western Development Laboratories
Sponsor MILICOM 97

12.01 Simulation of Two Routing Protocols Operating in a Low Earth Orbit Satellite Network Environment
Richard A. Raines, Air Force Institute of Technology, Richard F. Janoso, Air Force Institute of Technology, David M. Gallagher, Air Force Institute of Technology, and David L. Coulliette, Air Force Institute of Technology

12.02 Performance Comparison between ATM LAN Emulation, Classical IP over ATM, and Native ATM in a Multi-Platform Multi-Operating System Environment
Daniel J. Driscoll, Lockheed Martin Federal Systems, Dr. Nader Mehravari, Lockheed Martin Federal Systems, and Mark H. Olson, Lockheed Martin Federal Systems

* *Not presented; included in proceedings*

Monday
3 November

12.03 On Traffic Consideration of the ATM Multiplexer with Priorities
Z. Kopertowski, Military Communication Institute, Poland and W. Burakowski, Military Communication Institute, Poland

12.04 An X.400 Message Transfer Protocol for EMCON Network Situations
Christian Riechmann, FGAN/FFM, Germany

12.05 Distributed Assignment of Codes for Multihop Packet-Radio Networks
J.J. Garcia-Luna-Aceves, University of California, Santa Cruz and Jyoti Raju, University of California, Santa Cruz

12.06 Interoperability Over Low Data Rate Channels Using CORBA Mediated, Bit-Packed, Variable-Format Message Transmissions
Joseph Stowers, Booz•Allen & Hamilton Inc., Doug Westby-Gibson, Booz•Allen & Hamilton Inc., and Ivan Marsic, PhD, The State University of New Jersey

12.07 Prioritized State-Dependent Buffer-Management Schemes in ATM Switch
Marek Bromirski, Military Communication Institute, Poland and Jan Haratym, Ministry of National Defense, Poland

12.08 Selective Slow Start: A Simple Algorithm for Improving TCP Performance in Wireless ATM Environment
Upkar Varshney, Washburn University of Topeka

Session 13 Traffic Management in ATM-based Networks

2:30 pm - 5:30 pm
Cypress I, II

Chair Dr. Ibrahim Habib, The City College of New York
Sponsor MILCOM 97

13.01 Internetworking ATM with Wireless Land Mobile (WLM) Communication Systems
Gretchen Bivens, Rome Laboratory, Charles Hammond, Stanford Telecom, Max Williams, Stanford Telecom, and Martin Katz, Science Applications International Corporation

13.02 High Quality ATM Operation over Military and Commercial Satellites
Anil Agarwal, COMSAT Laboratories, R. Malghan, COMSAT Laboratories, Hari Bezwada, United States Army Communications and Electronic Command, and Lawrence E. Kingsley, United States Army Communications and Electronic Command

13.03 Performance of Integrated InterLAN Telephony Service Over an ATM Network
Vinod Mirchandani, University of Melbourne, Australia and David Everitt, University of Melbourne, Australia

13.04 Comparison of Restoration Strategies Based on Pre-planned Routing Methodologies in ATM Networks
L. Kant, Bellcore, B. Cheng, Racal Datacom, D. Hsing, Bellcore, and G. Goncu, Rutgers University

13.05 Radial Basis for Bandwidth Estimation in ATM Networks Using RBF Neural Network
S.A. Youssef, The City College of New York, I.W. Habib, The City College of New York, and T.N. Saadawi, The City College of New York

13.06 An Emerging Wireless Network ATM Architecture: Survivable ATM
James F. Durkin, Scientific Research Corporation and Alan J. Akins, Rome Laboratory

13.07 Advanced Intelligent Network (AIN)-based Alternate Carrier Routing (ACR) for NS/EP Telecommunications
Gabor Luka, National Communications System, Perry Fergus, Booz•Allen & Hamilton Inc., and David Fligor, Booz•Allen & Hamilton Inc.

Session 14 Speech Processing

2:30 pm - 5:30 pm
Windjammer III, IV

Chair Marion Baraniecki, COMSAT Laboratories
Sponsor MILCOM 97

14.01 Low Bit Rate Speech Compression Using Hidden Markov Modeling
Steven T. Bardenhagen, Sanders, A Lockheed Martin Company, Kathy L. Brown, Sanders, A Lockheed Martin Company, and Robert D. Braun, Sanders, A Lockheed Martin Company

Monday
3 November

14.02 On a Time Reduction of Pitch Searching by the Regular Pulse Search Technique in the CELP Vocoder
YoungHo Park, Seoul Mobile Telecon, JaeChan Yang, Seoul Mobile Telecon, SangMok Sohn, Soongsil University, Korea, and MyungJin Bae, Soongsil University, Korea

14.03 On a Smoothing Method by Time Axis Control with Zero-Crossing of Speech Signal
MyungJin Bae, Soongsil University, Korea and JongDeuk Kim, Soongsil University, Korea

14.04 A Robust 1200 bps Voice Coder Based on Vector Quantization of Line Spectral Frequencies
Shan Lu, COMSAT Laboratories and Marion Baraniecki, COMSAT Laboratories

14.05 Implementation of a Real-Time HY-2 Channel Vocoder Algorithm
Timothy S. Loos, Raytheon E-Systems

Tuesday
4 November

9:15 am – 12:15 pm
Spyglass I

Session 15 Modulation Techniques 1

Chair Jay Jones, Lockheed Martin
Sponsor IEEE Technical Committee on Information Infrastructure

15.01 High Speed Data Waveform Over Bandlimited Channels
Dr. Prabodh Varshney, Harris Corporation and Cliff Hessel, Harris Corporation

15.02 BER Analysis for a FFH Spread Spectrum System Employing DPSK Modulation Over a Rayleigh Fading Channel
R. Panchal, Polytech University, M. Boukli-Hacene, Polytech University, S. Sankaranarayanan, Polytech University, and M. Kouar, Polytech University

15.03 Multiresolution FSK/ASK Signaling for Frequency-Hop Communication Systems
Keith F. Conner, Clemson University and Professor Carl W. Baum, Clemson University

15.04 An Investigation of Relationships Between Side Information and Information Rate in Slow-Frequency-Hop Communications
Michael B. Pursley, Clemson University and Clint S. Wilkins, Clemson University

15.05 Power Spectral Density of Binary Digital Pulse Streams in the Presence of Independent Uniform Timing Jitter
Moe Z. Win, University of Southern California

15.06 Investigation of Data Transmission Over an Adaptive Delta Modulated Voice Channel by Simulations Using a Spreadsheet Program
Pauli Lallo, Signals School, Finland

15.07 A New Spread Spectrum System Using Spectral Correlation Technology
Shiping He, CRL, McMaster University, Ontario, Canada, Titus Lo, CRL, McMaster University, Ontario, Canada, and John Litva, CRL, McMaster University, Ontario, Canada

9:15 am – 12:15 pm
Windjammer III, IV

Session 16 Spread Spectrum and Antijam Advances

Chair Dr. Clark Robertson, Naval Postgraduate School
Sponsor IEEE Technical Committee on Information Infrastructure

16.01 A Pragmatic RAKE Receiver for Direct Sequence Spread Spectrum Coded Troposcatter Transmission
Guillaume Vivier, Alcatel TELSPACE, France and Philippe Sehier, Alcatel TELSPACE, France

16.02 Performance of Coded Multicarrier Spread Spectrum in the Presence of Nonlinearity
Je-hong Jong, University of Michigan and Wayne E. Stark, University of Michigan

16.03 Code-aided Adaptive Narrowband Interference Suppression for Direct-sequence Spread-spectrum Communications
H. Vincent Poor, Princeton University and Xiadong Wang, Princeton University

16.04 A Heuristic Approach to Higher Order Statistical Models for the Combined Process of a Direct-Sequence Signal in Additive White Gaussian Noise and Continuous Wave Interference after an Adaptive 2-bit ADC-Nonlinearity
Alois M. J. Goiser, Technical University, Vienna, Austria

16.05 DSSS/MCM System Performance in a Doppler Spread Channel
Thad B. Welch, University of Colorado at Colorado Springs and Rodger E. Ziemer, University of Colorado at Colorado Springs

16.06 Code-directed Synchronisation Scheme for Burst Spread Spectrum Communications
Don E. Gossink, Defence Science Technology Organisation, Australia, Stephen C. Cook, Defence Science Technology Organisation, Australia, and John A. Asenstorfer, Mobile Communication Research Centre, Australia

16.07 Performance of Coded Slow Frequency Hopping M-ARY FSK with Clamped Average Energy Metric in Follow-on Partial Band Jamming
Ari Pouttu, University of Oulu, Finland and Juhani Juntti, Finnish Air Force Headquarters, Finland

16.08 Analysis of Product Codes for Frequency-Hopped Spread-Spectrum with Partial Band Interference
Troy C. Nolan, University of Michigan and Wayne E. Stark, University of Michigan

16.09* Performance of an OFDM Spread Spectrum Communications System Using Lapped Transforms
Gary J. Saulnier, Rensselaer Polytechnic Institute, Mike Mettke, Rome Laboratory, and Michael J. Medley, Rome Laboratory

Session 17 Information Dissemination

9:15 am – 12:15 pm
Big Sur I, II, III

Chair Dr. Joe Rockmore, Cyladian Technology Consulting and Dr. Robert Douglas, DARPA
Sponsor MILCOM 97

17.01 Communications System Considerations for Unattended Army Battlefield Munition and Sensor Systems
Thomas J. McAdams, The MITRE Corporation, Thomas L. Thomas, The MITRE Corporation, and Robert Wade, United States Army Armaments Research, Development and Engineering Center (ARDEC)

17.02 Intelligent Decision Aids for 21st Century C^{4}I Architectures
Ram Voruganti, GTE Laboratories Incorporated, Che-Fn Yu, GTE Laboratories Inc., Nabil Hinnawi, GTE Laboratories Inc., Nabil Bitar, GTE Laboratories Inc., and Brian Rivera, Army Research Laboratories, Georgia Institute of Technology

17.03 Scheduling Information Dissemination by Satellite Broadcast
Robert J. Wellington, Computing Devices International

17.04 Scheduling Algorithms for Message Transmission Over a Satellite Broadcast System
Eytan Modiano, Massachusetts Institute of Technology, Lincoln Laboratory

17.05 IIDS: Intelligent Information Dissemination Server
Jon Dukes-Schlossberg, Lockheed Martin Missiles & Space, Yongwon Lee, Lockheed Martin Missiles & Space, and Nancy Lehrer, ISX Corporation

17.06 AFRTS Commercial Off the Shelf (COTS) Worldwide Digital Video Broadcast Network
Shahid Rahman, Scientific-Atlanta, Incorporated and Steve Richeson, Scientific-Atlanta, Incorporated

17.07 Network Interface to Tactical Communications
Ning H. Lu, ITT Aerospace/Communications Division

Session 18 Mobile Wireless Information Systems

9:15 am – 12:15 pm
Cypress I, II

Chair Dr. Kevin Mills, DARPA
Sponsor MILCOM 97

18.01 Future Army Mobile Multiple-Access Communications
Don Torrieri, Army Research Laboratory

18.02 Design Considerations for Mobile Wideband Wireless Network Architectures
Michael E. Humphrey, Motorola

18.03 Mobile Internetworking Protocols for Wireless Networks with ATM Backbones
Subhashini Rajagopalan, Bellcore, Ravi Jain, Bellcore, and Li Fung Chang, Bellcore

** Not presented; included in proceedings*

Tuesday
4 November
9:15 am – 12:15 pm
Windjammer I, II

18.04 C^4I Mobility Architectures for 21st Century Warfighters
Ram Voruganti, GTE Laboratories Incorporated and Allen Levesque, GTE Laboratories Incorporated

18.05 Modeling 21st Century Tactical Communications Networks
Ed Harrington, GTE Government Systems, Bill Josephson, GTE Government Systems, and John Paclik, GTE Government Systems

18.06 Wireless Networks of Opportunity in Support of Secure Field Operations
Roy H. Stehle, SRI International and Mark G. Lewis, SRI International

Session 19 Architecture and Protocols 2

Chair Dr. Edward Chandler, Titan Linkabit
Sponsor MILCOM 97

19.01 A Fault-Tolerant Real-Time Commercial LAN
Doug Rhoades, Hughes Aircraft Company

19.02 A Dynamic Packet Reservation Multiple Access Scheme for Wireless ATM
Deborah A. Dyson, Cornell University and Zygmunt J. Haas, Cornell University

19.03 Networking Protocols for Space Data Communications
Rafols Ramirez, The MITRE Corporation

19.04 Internetworking ATM with DAMA-Controlled SATCOM
Gretchen Bivens, Rome Laboratory, Charles Hammond, Stanford Telecom, and Martin Katz, Science Applications International Corporation

19.05 MIL-STD-188-220A Evolution: A Model for Technical Architecture Standards Development
Theodore J. Dzik, United States Army CECOM RD&E and Michael McMahon, ARINC, Inc.

19.06 A Forward Error Control Scheme for GBS and BADD
Bret Schein, Massachusetts Institute of Technology, Lincoln Laboratory and Steven Bernstein, Massachusetts Institute of Technology, Lincoln Laboratory

19.07 Formal Design and Testing of MIL-STD-188-220A Based on Estelle
Mariusz A. Fecko, University of Delaware, Paul D. Armer, University of Delaware, Adarshpal S. Sethi, University of Delaware, M. Umit Uyar, City College of New York, Ted Dzik, United States Army CECOM, Raymond Menell, United States Army CECOM, and Mike McMahon, ARINC, Inc.

19.08 A Link Layer Protocol for Efficient Transmission of TCP/IP via Satellite
Dr. J. Scott Stadler, Massachusetts Institute of Technology, Lincoln Laboratory

19.09* Matrix Amplifier and Routing System (MARS) Analysis Program
X. T. Vuong, Science Applications International Corporation

9:15 am – 12:15 pm
Cypress III

Session 20 Software Design and Applications

Chair Deborah Bournstein, Oracle
Sponsor MILCOM 97

20.01 Design and Implementation of NetEx: A Toolkit for Delay Guaranteed Communications
A. Sahoo, Texas A&M University, C. Li, Texas A&M University, B. Devalla, Texas A&M University, and Wei Zhao, Texas A&M University

20.02 Modeling VHDL Specifications as Consistent EFSMs
M. Umit Uyar, The City College of the City University of New York and Ali Y. Duale, The City College of the City University of New York

20.03 Information Extraction using the NLToolset
Lois C. Childs, Lockheed Martin Management and Data Systems

20.04 A Simple Probabilistic Approach to Classification and Routing
James Leistensnider, Lockheed Martin Management and Data Systems, and Jonathan Wilding, Lockheed Martin Management and Data Systems

** Not presented; included in proceedings*

Tuesday
4 November

20.05 Fuzzy Logic Implementation of a RGPO Jamming Detector for a Pilot Training System
Ellen Farrey-Goudreau, Harris Corporation and David B. Wood, Harris Corporation

20.06 Trusted Coalition Scenario Database
Cheri Reed, Oracle

20.07 Data Warehouse Tools
Wendel H. Yale, Oracle

20.08 Establishing the Requirements for Real-Time CORBA
Armond D. Inselberg, Lockheed Martin Western Development Laboratories and Peter Krupp, The MITRE Corporation

20.09* Automating the Capture of Technical Information
Carol S. Boser, Lockheed Martin Information Systems

20.10* The Performance of Image Compression Algorithms in Noisy Environments
Lisa M. Marvel, United States Army Research Laboratory and George W. Hartwig, Jr., United States Army Research Laboratory

Session 21 Smart Antennas

9:15 am – 12:15 pm
Spyglass II

Chair Dr. Arogyaswami Paulraj, Stanford University
Sponsor MILCOM 97

21.01 Strategies for Minimizing the Intercept Time in a Mobile Communication Network with Directive/Adaptive Antennas
Jung-Hyun Oh, University of Southern California and Robert A. Scholtz, University of Southern California

21.02 Adaptive Antenna System for PACS
Sumeet Sandhu, Stanford University and Arogyaswami Paulraj, Stanford University

21.03 Suboptimum Multiuser Detection of the QS-CDMA Systems Using Antenna Array
Kwang Soon Kim, Korea Advanced Institute of Science and Technology, Sun Yong Kim, Hallym University, Korea, Jooshik Lee, Korea Advanced Institute of Science and Technology, Iickho Song, Korea Advanced Institute of Science and Technology, Jinsoo Bae, Korea Advanced Institute of Science and Technology, and Seong Ro Lee, Korea Advanced Institute of Science and Technology

21.04 An Optimal Link Power Set for a Mobile Communication Network with Direct/Adaptive Antennas
Tien-Yow Liu, University of Southern California and Robert A. Scholtz, University of Southern California

Session 22 Modulation Techniques 2

2:30 pm – 5:30 pm
Spyglass I

Chair Dr. Alois M. J. Goiser, Technical University, Vienna
Sponsor MILCOM 97

22.01 Improved Fuzzy Frequency Hopping — No Show
Todd Moore, Harris Corporation and Dr. Athimoottil Mathew, Rochester Institute of Technology

22.02 Advanced Bandwidth Efficient Block Coded Modulation Over Fading Channels
Reuben C. Edwards, Lancaster University, United Kingdom, Bahram Honary, Lancaster University, United Kingdom, Stuart Farquhar, Defence Research Agency, United Kingdom, and Angela Noble, Defence Research Agency, United Kingdom

22.03 A Comparison of Slow-Frequency-Hop and Direct-Sequence Spread-Spectrum Systems for Different Multipath Delay Profiles
John H. Gass, Jr., ITT Aerospace/Communication Division and Michael B. Pursley, Clemson University

22.04 GMSK Linearization and Structured Channel Estimate for GSM Signals
Jen-Wei Liang, Stanford University, Boon C. Ng, Stanford University, Jiun-T. Chen, Stanford University, Arogyaswami Paulraj, Stanford University

** Not presented; included in proceedings*

Tuesday
4 November

22.05 Effects of CDMA Transmitter Filtering in Overlay Systems
Bradley J. Rainbolt, University of Florida and Scott L. Miller, University of Florida

22.06 A Spread Spectrum System with a Time Domain Processing Device
Shiping He, Communications Research Laboratory, McMaster University, Canada, John Litva, Communications Research Laboratory, McMaster University, Canada, and Titus Lo, Communications Research Laboratory, McMaster University, Canada

2:30 pm - 5:30 pm
Spyglass II

Session 23 Interference Suppression for Multiuser Mobile Communications

Chair Dr. Moe Win, University of Southern California
Sponsor MILCOM 97

23.01 Blind Separation of Co-Channel Digital Signals Under Imperfect Carrier Recovery
Michael D. Zoltowski, Purdue University and Anand Kannan, Purdue University

23.02 A Comparison of Subspace Adaptive Filtering Techniques for DS-CDMA Interference Suppression
Michael L. Honig, Northwestern University

23.03 Advanced Interference Rejection and Anti-jam Methods for Low-power Mobile Battlefield Communications
J. Scott Chuprun, Motorola, Chad S. Bergstrom, Motorola, and Amy M. Guzek, Motorola

23.04 Optimal Diversity Allocation for Multi-User Systems Operating over Jammed Multipath Fading Channels
Dennis L. Goeckel, University of Massachusetts and Wayne E. Stark, University of Michigan

23.05 Low Complexity Decoders for Channels with Intersymbol-Interference
Konrad Kratochwil, Vienna University of Technology, Austria

23.06 Adaptive Minimum Dispersion Interference Suppression for DS/CDMA Systems in Non-Gaussian Impulsive Channels
Julie Dickerson, Iowa State University and Seoyoung Lee, Iowa State University

Im Surrogate
mostly managers
attend this

23.07 Decorrelator Detection for Quasi-Synchronous Multicarrier CDMA
Ronald A. Iltis, University of California, Santa Barbara

23.08 A Coded OFDM System for Time-Varying Multipath Rayleigh Fading Environment
Yun Hee Kim, Korea Advanced Institute of Science and Technology, Hong Gil Kim, Korea Advanced Institute of Science and Technology, Iickho Song, Korea Advanced Institute of Science and Technology, Min Joon Lee, Korea Advanced Institute of Science and Technology, and Seok Ho Yoon, Korea Advanced Institute of Science and Technology

23.09* Transform Domain LMS Convergence in Tone Interference
Michael J. Medley, Rome Laboratory and Gary J. Saulnier, Rensselaer Polytechnic Institute

2:30 pm - 5:30 pm
Windjammer I, II

Session 24 Global Broadcast Systems/Services

Chair Commander David Baciocco, United States Navy
Sponsor MILCOM 97

Hughes
DBS
USSB

A 24.01 Commercial Off-the-Shelf (COTS), Global Broadcast Service (GBS), and the Warfighter
notes see last page
Commander Benjamin F. Roper, The Joint Staff/J6S, Pentagon

0 Back

24.02 Global Broadcast Service Payload—Utilization of Commercial Technologies for Military Applications
UFO Satellites w/GBS
Steve Archer, Hughes Space & Communications Company and Captain James Loiselle, United States Navy
Ka band 30 UP 20 DN

attendees
from
Europe World
S.A. asia
india
pakistan

24.03 ACTS Mobile Terminal on USS Princeton (CG 59)
Roy A. Axford, Naval Command, Control and Ocean Surveillance Center, George A. Evanoff, Naval Command, Control and Ocean Surveillance Center, Gregory A. Bostrom, Naval Command, Control and Ocean Surveillance Center, Richard C. North, Naval Command, Control and Ocean Surveillance Center, Kevin C. Owens, Naval Command, Control and Ocean Surveillance Center, and James Toy, Naval Command, Control and Ocean Surveillance Center

* Not presented; included in proceedings

24.04 Design, Construction, and Demonstration of a Mobile Global Broadcast Service (GBS) Joint In-Theater Injection Terminal
John R. McHenry, ARINC Inc., William L. Mundie, Integrated Information Technology Corporation, and Thomas S. Meals, United States Army Space Command

24.05 The Naval Postgraduate School GBS Testbed
Paul H. Moose, Naval Postgraduate School, Keith Schaffler, Naval Postgraduate School, Steve Scotty, Naval Postgraduate School, John Watkins, Naval Postgraduate School, and Robert Wellborn, Naval Postgraduate School

24.06 Deploying Internet Services over a Direct Broadcast Satellite Network: Challenges and Opportunities in the Global Broadcast Service
Robert Lindell, University of Southern California Information Sciences Institute, Joseph Bannister, University of Southern California Information Sciences Institute, Cheryl DeMatteis, The Aerospace Corporation, Michael O'Brien, The Aerospace Corporation, James Stepanek, The Aerospace Corporation, Michael Campbell, The Aerospace Corporation, and Fred Bauer, SRI International

24.07 MILSATCOM/GBS Utility Study
Nancy A. Rantowich, Hughes Aircraft Studies & Analysis and Dr. Marc L. Sabin, Hughes Space & Communications Company

Session 25 Satellite Communications

2:30 pm - 5:30 pm
Big Sur I, II, III

Chair Frank Prautzsch, Hughes Space and Communications Company
Sponsor MILCOM 97

25.01 Data Management and Common Procedures for Access and Operation with Military and Commercial Satellite Systems
Hugh C. Lewis, COMSAT Laboratories, Deborah D. Opiekun, COMSAT Laboratories, Gerald Lo, COMSAT Laboratories

25.02 TMN Applied to an Integrated Management System for DoD Communications Networks Using Military and Commercial Satellites
Sankar Ramaswamy, COMSAT Laboratories

25.03 Sensitivity of Modulation Index in Satellite Communication Link Analysis
Junho Choi, Naval Research Laboratory

25.04 Reliability Concerns for Double Clad Fiber Lasers for Space Based Laser Communications
Joseph A. Abate, Bell Laboratories, Lucent Technologies, Jay R. Simpson, Bell Laboratories, Lucent Technologies, D.L. Brownlow, Bell Laboratories, Lucent Technologies, David J. Digiovanni, Bell Laboratories, Lucent Technologies, Sriraman Kannan, Bell Laboratories, Lucent Technologies, Michael J. Luvalle, Bell Laboratories, Lucent Technologies, Paul J. Lemaire, Bell Laboratories, Lucent Technologies, and Andrew J. Stentz, Bell Laboratories, Lucent Technologies

25.05 COTS Implementation of Satellite-Based, Full-Mesh Multimedia Networks
Burt H. Liebowitz, Orion Atlantic Network Services

25.06 Satellite ATM Modem
D. M. Chitre, COMSAT Laboratories and Soheil Sayegh, COMSAT Laboratories

25.07 Test Facility for SHF (C and Ku-band) Satellite Communications
James R. Fleming, COMSAT Laboratories and David N. Meadows, COMSAT Laboratories

25.08 The EAST Project (Euro African Satellite Telecommunications): An Opportunity for the Armed Forces to Use Commercial SATCOM System
Bernard Troy, Matra Marconi Space, France

25.09* A Resource Allocation for a Joint Occupancy of Mixed Waveforms in the Same Transponder
Anh Q. Le, COMSAT Laboratories

** Not presented; included in proceedings*

Tuesday
4 November

2:30 pm - 5:30 pm
Cypress III

Session 26 Multicasting

Chair	Dr. Dan Boger, Naval Postgraduate School
Sponsor	MILCOM 97
26.01	Session Layer Requirements for Multicastinternets *Rex Buddenberg, Naval Postgraduate School*
26.02	Reliable Multicast Transport and Integrated Erasure-Based Forward Error Correction *Joseph P. Macker, Naval Research Laboratory*
26.03	Convolutionally Encoded Phase-Shift-Key Modulation for Multimedia Multicast Transmission in Mobile Wireless Networks *Michael B. Pursley, Clemson University and John M. Shea, Clemson University*
26.04	A Scalable Multicast Routing *Changdong Liu, The City University of New York, Myung J. Lee, The City University of New York, and Tarek N. Saadawi, The City University of New York*
26.05	A Reliable Multicast Transport Protocol for a Global Broadcast Service-based Network *Fred Bauer, SRI International and Michael Brown, SRI International*

2:30 pm - 5:30 pm
Cypress I, II

Session 27 Information Management Systems

Chair	Ben Goldman, Cisco Systems
Sponsor	MILCOM 97
27.01	A More Efficient Distance Vector Routing Algorithm *Zhengyu Xu, University of California, Santa Cruz, Sa Dai, University of California, Santa Cruz and J.J. Garcia-Luna-Aceves, University of California, Santa Cruz*
27.02	Performance Analysis of PNNI Routing at ATM Networks: Hierarchical Reduced Load Approximation *Hui Xie, University of Maryland and John S. Baras, University of Maryland*
27.03	Application of the ATM-SONET to New Attack Submarine (NSSN) Radar Subsystem *John C. Kim, TRW Incorporated and Phil Girardi, TRW Incorporated*
27.04	Experiences with Federal Government Installations in Western Washington *Randy Foldvik, US WEST Communications Federal Services and Tim Grant, US WEST Communications Federal Services*
27.05	Asymmetric Routing *Lieutenant Commander R. Scott Starsman, DISA JIEO, Norfolk*
27.06	The Intelligence Fusion Center (IFC): A COTS-based Information Retrieval, Processing, Archiving and System *Michael Powers, American Management Systems*

2:30 pm - 5:30 pm
Windjammer III, IV

Session 28 HF and Ground Communications

Chair	Scotty Miller, Motorola
Sponsor	MILCOM 97
28.01	Power Control and Active Channel Selection in an LPI FH System for FH Communications *Gunnar Bark, Royal Institute of Technology, Sweden*
28.02	Errors in High Frequency Automatic Link Establishment Radios *Richard Lay, Naval Command, Control and Ocean Surveillance Center*
28.03	A Serial Tone ECCM Modem for FH Channels *Michael A. Wadsworth, Harris Corporation and Walter C. Vester, Harris Corporation*
28.04	Wideband Multi-Carrier Transmission for Military HF Communication *Jan E.M. Nilsson, Sweden's Defence Research Establishment and Timothy C. Giles, Sweden's Defence Research Establishment*
28.05	Direct-Sequence Spread-Spectrum Modem for Data Communications over Power-Lines *Alois M. J. Goiser, Technical University, Vienna, Austria*

Tuesday
4 November

28.06 Analysis and Measurements of Information Transmission Over an Adaptive Delta Modulated Voice Channel
Pauli Lallo, Signals School, Finland

28.07 Optical Wavelength Division Multiplexing for Broadband Trunking of RF Channels to Remote Antennas
L.S. Tamil, University of Texas at Dallas and J.R. Cleveland, Raytheon E-Systems

28.08 Results of New Automatic Link Establishment and Maintenance Techniques for HF Radio Systems
Michael D. Street, Defence Evaluation and Research Agency, United Kingdom and Michael Darnell, University of Leeds, United Kingdom

28.09* The Design of Very High Data Rate HF Modems for Range Extension of VHF Nets
Mrs. A.P. Noble, Defence Evaluation and Research Agency, United Kingdom, J.A. Spicer, Defence Evaluation and Research Agency, United Kingdom, M.P. Midwinter, Defence Evaluation and Research Agency, United Kingdom, and Dr. S.G. Farquhar, Defence Evaluation and Research Agency, United Kingdom

Session 29 Adaptive Processing

Wednesday
5 November

9:15 am – 12:15 pm
Windjammer I, II

Chair Captain J. Scott Goldstein, United States Air Force
Sponsor MILCOM 97

29.01 Applications of Blind Channel Estimation to HF Communication
Qi Zhang, University of Connecticut, Jeffrey Q. Bao, University of Connecticut, and Lang Tong, University of Connecticut

29.02 Nonparametric Channel Identification and Multichannel Equalization for Narrowband Digital Communications
Timothy A. Thomas, Purdue University and Michael D. Zoltowski, Purdue University

29.03 A New Method of Wiener Filtering and its Application to Interference Mitigation for Communications
J. Scott Goldstein, United States Air Force Research Laboratory and Irving S. Reed, University of Southern California

29.04 Source Enumeration Using a Signal-Selective Information Theoretic Criterion
Thomas E. Shrimpton, University of Mayland and Stephen V. Schell, University of California, Davis

29.05 Applications of Space-Time Adaptive Processing in Wireless Communications
A.M. Haimovich, New Jersey Institute of Technology and A. Shah, New Jersey Institute of Technology

29.06 An Adaptive-Rate Anti-Jam System for Optimal Voice Communication
J.E. Klieder, Motorola and W. M. Campbell, Motorola

29.07 Performance Enhancement for DS-CDMA Receivers Using Space-Path Diversity
S. Buljore, University of California, San Diego, J.F. Diouris, Laboratoire SEI, IRESTE, France, J. Zeidler, University of California, San Diego, and L. Milstein, University of California, San Diego

29.08 Modular Learning Strategy for Signal Detection in a Nonstationary Environment
Simon Haykin, Communications Research Laboratory, McMaster University, Canada and Tarun Kumar Bhattacharya, Sicom, Canada

29.09* On-Line Adaptive Estimation of Symbol Period
Milos Doroslovacki, George Washington University and Lei Yao, George Washington University

Session 30 Communication Security

9:15 am – 12:15 pm
Windjammer III, IV

Chair Mel Landesberg, BBN
Sponsor MILCOM 97

30.01 Digital Cellular/PCS Standards Development for STU-III Secure Bearer Service Options—Reliability Simulations
Douglas J. Rahikka, United States National Security Agency, Ronald E. Krebs, United States National Security Agency, Steven W. Roberts, United States National Security Agency, and Joseph D. Zakar, United States National Security Agency

** Not presented; included in proceedings*

Wednesday
5 November

30.02 Security of Current Mobile IP Solutions
Stuart Jacobs, GTE Laboratories Incorporated and Gregory Cirincione, Army Research Laboratories

30.03 Safeguarding Commercial Telecommunications for C^4I Traffic: A Paradigm for Mitigation
Joan Fowler, Data Systems Analysts, Inc. and Robert C. Seate III, Data Systems Analysts, Inc.

30.04 A Simple Framework for Filtering Queued SMTP Mail
Tim Bass, Science Applications International Corporation and Lieutenant Colonel Glenn Watt, United States Air Force, Air Combat Command

30.05 The Enhanced Electronic Postmark: Integration of Military and Commercial Communications
Dr. G. Arthur Mihram, University of Southern California and Dr. Danielle Mihram,University of Southern California

30.06 Network Interoperability Program
D. Aretha Moore, National Security Agency

9:15 am – 12:15 pm
Cypress III

Session 31 Tactical Application of Commercial PCS and DBS

Chair Orlando Cabrera, Harris Corporation
Sponsor MILCOM 97

31.01 Optimization of Tactical Multimedia Networks in the Forward Area
James R. McChesney, ITT Aerospace/Communications Division

31.02 CDMA Cellular System Capacity in the Military Environment
Siamak S. Tabrizi, Rome Laboratory, Leonard E. Miller, J. S. Lee Associates, and Jhong S. Lee, J. S. Lee Associates

31.03 GSM Signalling for Prioritized Military LEOs Communications
Anthony Ween, University of South Australia, Aziz G. Qureshi, University of South Australia, Miro Kraetzl, Defence Science and Technology Organization, Australia, and Mark H. Rossiter, Defence Science and Technology Organization, Australia

31.04 Globalstar for the Military
Richard Hendrickson, Globalstar

31.05 Television Direct to Sailors (TV-DTS) Event Awareness and Quality of Life for Sailors and Marines at Sea
Commander Michael A. Ziegler, United States Navy, Lieutenant Commander James J. Shaw, United States Navy, Commander Christopher S. Burns, United States Naval Reserve, and John E. Hurthere, NCCOSC, RDTE

9:15 am – 12:15 pm
Spyglass I, II

Session 32 DoD Communications Advances 1

Chair Wayne Bonser, Rome Laboratory
Sponsor MILCOM 97

32.01 Standards, Requirements, and Recommendations Development for Multiband, Multimode Radio Systems
James A. Hoffmeyer, Institute for Telecommunications Sciences and Wayne Bonser, Rome Laboratory

32.02 Multiband Multimode Radio (MBMMR) Technology Applications in the Military, Civil, and Commercial Sectors
Dr. Eugene Newman, State University of New York and Dave Climek, The MITRE Corporation

32.03 Programmable Radio Benefits for the Military
Richard D. Hinman, Rome Laboratory and Captain Michael Gudaitis, Rome Laboratory

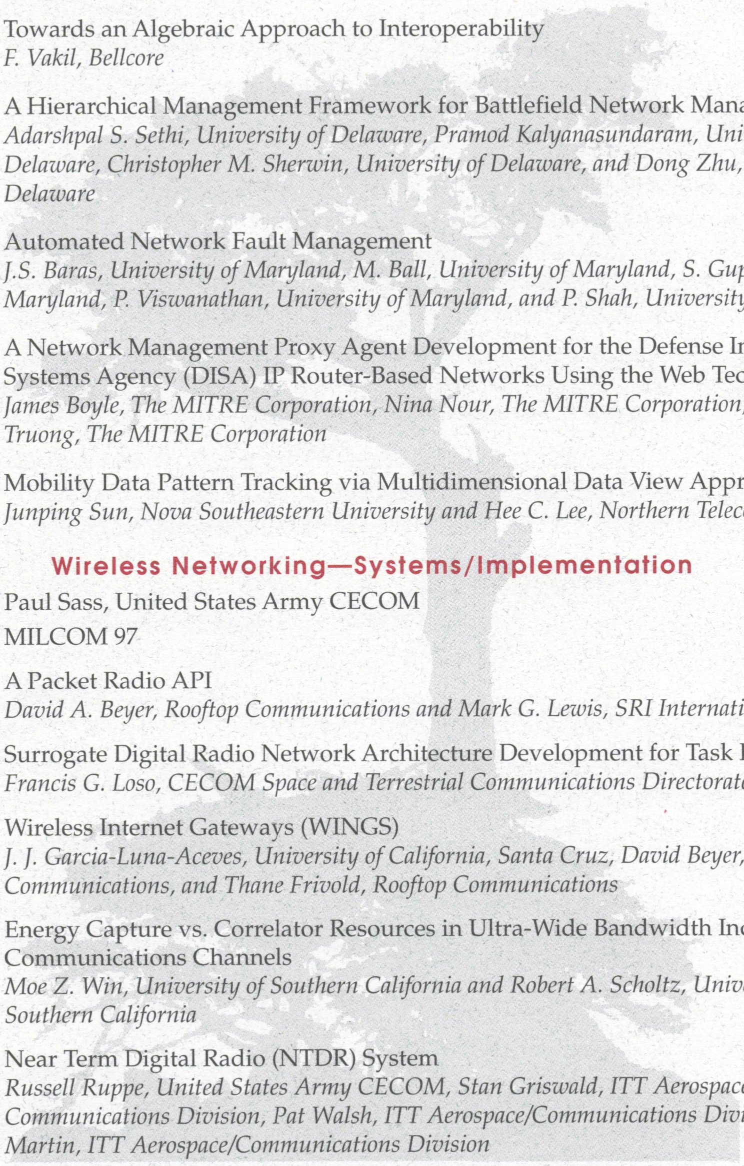
32.04 Programmable Digital Radio
Robert S. Prill, GEC-Marconi Hazeltine

32.05 Tactical Software Radio Concept
Captain Michael S. Gudaitis, Rome Laboratory and Richard D. Hinman, Rome Laboratory

32.06 SPEAKeasy II—An IPT Approach to Software Programmable Radio Development
Ron Vidano, Motorola

32.07 Multicasting Experiments in Tactical Operations
Earl Craighill, SRI International and Jay Staba, United States Army CECOM

32.08 Zebra-Multi-Channel Digital Modular Radio: Architecture and Performance
Dr. John D. Bard, Mnemonics, Inc., T. James Bryan, Mnemonics, Inc., and Thomas C. Colvin, Mnemonics, Inc.



Session 33 Network Management and Control 1

9:15 am – 12:15 pm
Cypress I, II

Chair Dr. Tsong-Ho Wu, Bellcore
Sponsor IEEE Technical Committee on Tactical Communications

33.01 A Network Management Architecture for Battlefield Networks
Chien-Chung Shen, Bellcore, Deh-Phone Hsing, Bellcore, Tsong-Ho Wu, Bellcore, and Yukun Tsai, Bellcore

33.02 Towards an Algebraic Approach to Interoperability
F. Vakil, Bellcore

33.03 A Hierarchical Management Framework for Battlefield Network Management
Adarshpal S. Sethi, University of Delaware, Pramod Kalyanasundaram, University of Delaware, Christopher M. Sherwin, University of Delaware, and Dong Zhu, University of Delaware

33.04 Automated Network Fault Management
J.S. Baras, University of Maryland, M. Ball, University of Maryland, S. Gupta, University of Maryland, P. Viswanathan, University of Maryland, and P. Shah, University of Maryland

33.05 A Network Management Proxy Agent Development for the Defense Information Systems Agency (DISA) IP Router-Based Networks Using the Web Technology
James Boyle, The MITRE Corporation, Nina Nour, The MITRE Corporation, and Hieu Truong, The MITRE Corporation

33.06 Mobility Data Pattern Tracking via Multidimensional Data View Approach
Junping Sun, Nova Southeastern University and Hee C. Lee, Northern Telecom

Session 34 Wireless Networking—Systems/Implementation

9:15 am – 12:15 pm
Big Sur I, II

Chair Paul Sass, United States Army CECOM
Sponsor MILCOM 97

34.01 A Packet Radio API
David A. Beyer, Rooftop Communications and Mark G. Lewis, SRI International

34.02 Surrogate Digital Radio Network Architecture Development for Task Force XXI
Francis G. Loso, CECOM Space and Terrestrial Communications Directorate

34.03 Wireless Internet Gateways (WINGS)
J. J. Garcia-Luna-Aceves, University of California, Santa Cruz, David Beyer, Rooftop Communications, and Thane Frivold, Rooftop Communications

34.04 Energy Capture vs. Correlator Resources in Ultra-Wide Bandwidth Indoor Wireless Communications Channels
Moe Z. Win, University of Southern California and Robert A. Scholtz, University of Southern California

34.05 Near Term Digital Radio (NTDR) System
Russell Ruppe, United States Army CECOM, Stan Griswald, ITT Aerospace/Communications Division, Pat Walsh, ITT Aerospace/Communications Division, and Robert Martin, ITT Aerospace/Communications Division

34.06 CDMA Cellular Architecture for Army Tactical Communications
Jay Staba, United States Army Communications Electronics Command, Tonis Vaga, Booz-Allen & Hamilton, Inc., Tom Dennis, Lucent Technologies, and Igal Sharret, Telgrid Technologies

34.07 Wireless Communications for a Multiple Robot System
G.M. Lundy, Naval Postgraduate School and A.J. Bekas, Naval Postgraduate School

Wednesday
5 November

34.08 Distributed Anti-Jam Wireless Communications Network
Margaret Ennis, Motorola and Scott Chuprun, Motorola

34.09* Trunked Land Mobile Radio in Tactical Applications
Jay Staba, United States Army CECOM, Jim Binnion, SRI International, Earl Craighill, SRI International, Bob Hicks, SRI International, and Scott Seaton, SRI International

9:15 am – 12:15 pm
Big Sur III

Session 35 Communication System Integration and Modeling

Chairs Farrokh Abrishamkar, Lucent Technologies, and Chipping Nee, Lucent Technologies
Sponsor MILCOM 97

35.01 An ATM Simulation System with Realistic Traffic Modeling
Douglas A. Junkins, University of Colorado at Colorado Springs and Chia-Jiu Wang, University of Colorado at Colorado Springs

35.02 Use of Commercial Products for Configuration Management of Military Networks
Anthony G. Fonzo, United States Army Communications–Electronics Command, Mark K. Bradley, Booz·Allen & Hamilton, Inc., and Jack S. Garhart, Booz·Allen & Hamilton, Inc.

35.03 Congestion Control by Traffic Shaping for Ground/Satellite Network
Timothy Ju, Lockheed Martin Missiles & Space and Gary Ogasawara, Lockheed Martin Missiles & Space

35.04 Comparison of Resistance Requirement of Military Communication Equipment Against Environmental Medium Influence in Poland and USA on the Base of the Chosen Expositions
Edward Golan, Military Communication Institute, Poland, Maciej Jaroszynski, Military Communication Institute, Poland, and Krzysztof Szuba, Military Communication Institute, Poland

35.05 A Practical Approach to the Implementation of Multiple Radio Configurations Utilizing Reconfigurable Hardware and Software Building Blocks
Andy Ivers, Harris RF Communications and David Smith, Harris RF Communications

35.06 Platform Integration of UHF Multi-Network Intelligence Terminals Using COTS, GOTS, and NDI RF Ancillary Equipment
Dave Cleotelis, Raytheon E-Systems and Ernie Franke, Raytheon E-Systems

35.07 DISN Deployed Pilot Network
Norman G. Jones, Defense Information Systems Agency, Daniel L. Coffing, Defense Information Systems Agency, John F.W. Dietz, Defense Information Systems Agency, Thomas L. McCrickard, Defense Information Systems Agency, and Charles J. Pitts Jr., SAIC

35.08 Application of the System Engineering Process in Developing Joint System Architectures
Kurt M. Kovach, United States Army CECOM, John M. Siliato, United States Army CECOM, and Frederick T. Beale, Jr., Booz·Allen & Hamilton, Inc.

35.09* Hierarchical, Layered Modeling and Performance Evaluation of Hybrid Communications Networks
J.S. Baras, University of Maryland, M. S. Corson, University of Maryland, K. Jang, University of Maryland, M. Li, University of Maryland, A. Misra, University of Maryland, and H. Xie, University of Maryland

2:30 pm – 5:30 pm
Spyglass I

Session 36 Signal Detection and Classification

Chair Dr. Tokunbo Ogunfumi, Santa Clara University
Sponsor MILCOM 97

36.01 Direct Sequence Spread Spectrum Code Acquisition in Fading Channel: Mean Acquisition Time of Serial Search Multiple-Dwell Detector
Jan Simsa, Academy of Sciences of the Czech Republic, Prague

36.02 Techniques for Detecting & Characterising Covert Communication Signals
Peter C.J. Hill, Cranfield University, United Kingdom, Vivian E. Comley, Cranfield University, United Kingdom, and Ed R. Adams, Cranfield University, United Kingdom

** Not presented; included in proceedings*

36.03 Chip-Rate Hopping Counters Chip-Rate Detection of Direct Sequence Spread Spectrum Signals
Wayne McPherson, VISTAR Telecommunications, Incorporated, Canada, Douglas A. Hill, Defence Research Establishment, Ottawa, Canada, Loc Mai, Defence Research Establishment, Ottawa, Canada, and James S. Wight, Carleton University, Canada

36.04 Modulation Classification of QAM Schemes Using the DFT of Phase Histogram Combined with Modulus Information
Christoph Schreyogg, Daimler-Benz AG, Germany and Jurgen Reichert, Daimler-Benz Aerospace AG, Germany

36.05 Robust Classification of Modulation Types Using Spectral Features Applied to HMM
Christoph Schreyogg, Daimler-Benz AG, Germany, Kai Kittel, Daimler-Benz AG, Germany, Ulrich Kressel, Daimler-Benz AG, Germany, and Jurgen Reichert, Daimler-Benz Aerospace AG, Germany

36.06 Median-Shift Sign Statistics for Constant Signal Detection in Impulsive Noise Environment
Hong Gil Kim, Korea Advanced Institute of Science and Technology, Iickho Song, Korea Advanced Institute of Science and Technology, Kwang Soon Kim, Korea Advanced Institute of Science and Technology, Yun Hee Kim Korea Advanced Institute of Science and Technology, and So Ryoung Park, Korea Advanced Institute of Science and Technology

36.07 Modulation Classification by Means of Different Orders Statistical Moments
Christophe J. LeMartret, CELAR, France and Denys Boiteau, CESTA, France

36.08 Recursive Orthogonal Least Squares Method and its Application in Nonlinear Adaptive Filtering
Shue-Lee Chang, Santa Clara University and Dr. Tokunbo Ogunfunmi, Santa Clara University

Session 37 Information Security

2:30 pm – 5:30 pm
Cypress I

Chair Dr. George Dinolt, Lockheed Martin Western Development Laboratories
Sponsor MILCOM 97

37.01 A DSP Based Bit-Synchronization Algorithm
Timothy S. Loos, Raytheon E-Systems

37.02 Advanced Intelligent Network (AIN) Security in Support of NS/EP Telecommunications
Gabor Luka, National Communications System, Perry Fergus, Booz•Allen & Hamilton, Inc., and David Fligor, Booz•Allen & Hamilton, Inc.

37.03 A Cryptographically Secure EW Database with Selective Random Access
N. Ikram, University of Bradford, United Kingdom and S. J. Shepherd, University of Bradford, United Kingdom

37.04 A New Capability for Creation of MLS ATM LANs and WANs
Gary N. Cohen, GTE Governent Systems, William S. Dowey, GTE Governent Systems, Dana M. DeLuca, GTE Governent Systems, Mark R. Fuglestad, GTE Governent Systems, and John E. Ostrowski, GTE Governent Systems

37.05 A Re-usable Architecture for Embedded INFOSEC Applications
Richard Quintana, Harris Corporation

37.06 Reducing the Risk of Multi-Level Secure (MLS) Workstations
J. Eric Klinker, Naval Research Lab and David M. Mihelcic, Naval Research Lab

Session 38 Ground Station Technologies

2:30 pm - 5:30 pm
Windjammer I, II

Chair Gary Ranshous, Harris Corporation
Sponsor MILCOM 97

38.01 INTELSAT Type Approval of Military Tri-band SATCOM Terminals
David J. Belanger, COMSAT World Systems and Calvin B. Cotner, COMSAT World Systems

38.02 A Comparison of DSCS and Commercial Satellite Communications Service Requirements
Peter D. Maurer, COMSAT World Systems

Wednesday
5 November

38.03 Combating Low UHF SATCOM Downlink Margin
Ernie Franke, Raytheon E-Systems and Don Stephens, Raytheon E-Systems

38.04 High Data Rate UHF SATCOM
Donald R. Stephens, Raytheon E-Systems and Kevin C. Kreitzer, Raytheon E-Systems

38.05 Fault Detection and Fault Isolation in the Ground Station
Donald C. Elmore, Lockheed Martin Tactical Defense Systems and Terry R. Hurd, Harris Corporation

38.06 Broadband Line of Sight Wireless WAN Using Multibeam Phased Arrays and High Capacity Trunk Radios
Leslie T. Flynn, Harris Corporation

38.07 A Single Card OM-73 Compatible SATCOM Modem
Richard J. Saggio, L-3 Communications, Dale Fonnesbeck, L-3 Communications, and Donald Mills, L-3 Communications

2:30 pm - 5:30 pm
Big Sur I, II

Session 39 DoD Communications Advances 2

Chair David Climek, The MITRE Corporation
Sponsor MILCOM 97

39.01 Load Shedding, Routing, and Frequency Selection Algorithms for High Frequency Networks
Marcel L. Scholz, Defence Science and Technology Organisation, Australia and Philip A. Stimson, Defence Science and Technology Organisation, Australia

39.02 Virtual Tree Path Management for Battlefield Networks
Adarshpal S. Sethi, University of Delaware and Prashant Ramarao, University of Delaware

39.03 Channel Sounder for the Tactical VHF-Range
Gerald L. Berger, University of Technology, Vienna, Austria and Helmut Safer, University of Technology, Vienna, Austria

39.04 Parameter Optimization for Sincgars Packet Radio Networks
C. J. Yoon, ITT Aerospace/Communications Division, C. Chiu Chan, ITT Aerospace/Communications Division, and E. Whitehill, ITT Aerospace/Communications Division

39.05 On-the-Move High-Capacity Trunk Radio: Field Measurements
Victor J. Procopio, United States Army Communications Electronics Command, Clifford W. Prettie, Applied Signal Technology, and William T. Barnett, Telos Corporation

39.06 Development and Application of the 188-220 Protocol Test Tool (PTT)
Jennifer Zbozny, United States Army Communications Electronics Command and Chinglan Lin, Logicon

39.07 On-the-Move High-Capacity Trunk Radio: Laboratory Simulation
Clifford W. Prettie, Applied Signal Technology, Victor J. Procopio, United States Army Communications Electronics Command, William T. Barnett, Telos Corporation, and Mark Lambert, Atlantic Consulting Services

2:30 pm - 5:30 pm
Cypress II, III

Session 40 Network Management and Control 2

Chair Nina Nour, The MITRE Corporation
Sponsor MILCOM 97

40.01 A Distributed Trunking Mechanism for Ad Hoc VHF Tactical Networking
Stan Vitebskiy, Harris Corporation and Jeffrey A. Kroon, Harris Corporation

40.02 Protocol Architecture for Tactical Integrated Services Mobile Networks
Amir Uziel, Naval Postgraduate School, and Murali Tummala, Naval Postgraduate School

40.03 Maximizing the Use of COTS Network Management Products in AF SCN Control and Monitor Applications
Jerry Sonnenberg, Harris Corporation

40.04 Network Management Training for Tactical Systems
Christopher B. Duncombe, GTE Government Systems

40.05 A Mission-Based ATM Network Manager
Thomas A. Parsons, Booz•Allen & Hamilton, Inc. and Michael Martone, Booz•Allen & Hamilton, Inc.

40.06 On the Effectiveness of Effective Bandwidths for Call Admission Control in Military ATM Networks
Grzegorz Rozanski, Military University of Technology, Poland and Marek Bromirski, Military Communications Institute, Poland

40.07* The Network Architecture Puzzle
James Mazzei, TECHPLAN Corporation

40.08* CAEIs Approach for a Texas Optical Network Initiative (TONI) to Develop Applications for Wave Division Multiplexing (WDM)
Johnny Berry, Center for Advanced Electronic Imaging

Session 41 Wireless Networking—Research/Protocols

2:30 pm - 5:30 pm
Spyglass II

Chair Darius Mohenin, GTE
Sponsor MILCOM 97

41.01 Decentralized Power Management Algorithm for Frequency Reuse
C.H. Lee, Naval Postgraduate School

41.02 A Link Activation Protocol of a Mobile Communication Network with Direct/Adaptive Antennas
Tien-Yow Liu, Communication Science Institute and Robert A. Scholtz, Communication Science Institute

41.03 Network Management of Wireless Tactical Networks
Carlos Pomalaza-Raez, Indiana University—Purdue University, Fort Wayne

41.04 On the Performance of a Medium Access Control Scheme for the Reconfigurable Wireless Networks
Zygmunt J. Haas, Cornell University

41.05 Design and Performance Evaluation of RAC/EAC for Wireless ATM Environment
Upkar Varshney, Washburn University of Topeka

41.06 Algorithms for Finding Optimal Offered Load in Wireless Communication Networks
Jeffrey E. Wieselthier, Naval Research Laboratory, Gam D. Nguyen, Naval Research Laboratory, and Anthony Ephremides, University of Maryland

41.07 A Generic Channel Simulation for Wireless Channels
Phillip A. Bello, BELLO, Inc.

41.08 Wireless MAC Protocols for Real-Time Battlefield Communications
Michael J. Markowski, University of Deleware and Adarshpal S. Sethi, University of Deleware

Session 42 Expert/AI Systems

2:30 pm - 5:30 pm
Big Sur III

Chair Dr. Marie desJardins, SRI International
Sponsor MILCOM 97

42.01 Cable Abstracting and Indexing System (CANIS) Prototype
Deborah A. Brady, Lockheed Martin Management and Data Systems

42.02 ATM Traffic Shaper with Neural Control
Marek Bromirski, Military Communication Institute, Poland

42.03 VBR Traffic Prediction in ATM System
Wieshaw Lobejko, Military Communication Institute, Poland

42.04 A General Framework for Building Networked Expert Systems
Hongmin (Bob) Zhang, Aptronix, Incorporated and Dongping (Daniel) Zhu, Aptronix, Inc.

42.05 Synthesizing Summary Knowledge from Distributed Heterogeneous Information Sources
Edwin R. Addison, KnowledgeLink, L.L.C.

42.06 Neural-Network Superresolution
Don Torrieri, Army Research Laboratory and Kesh Bakhru, Cubic Defense Systems

** Not presented; included in proceedings*

Classified Technical Sessions

Naval Postgraduate School

Monday
3 November

9:15 am – 12:15 pm
Spanagel Hall
Room 231

Session C1 Laser Communications (Satellite Crosslinks, Transatmospheric, LOS, Terrestrial, and Tactical)

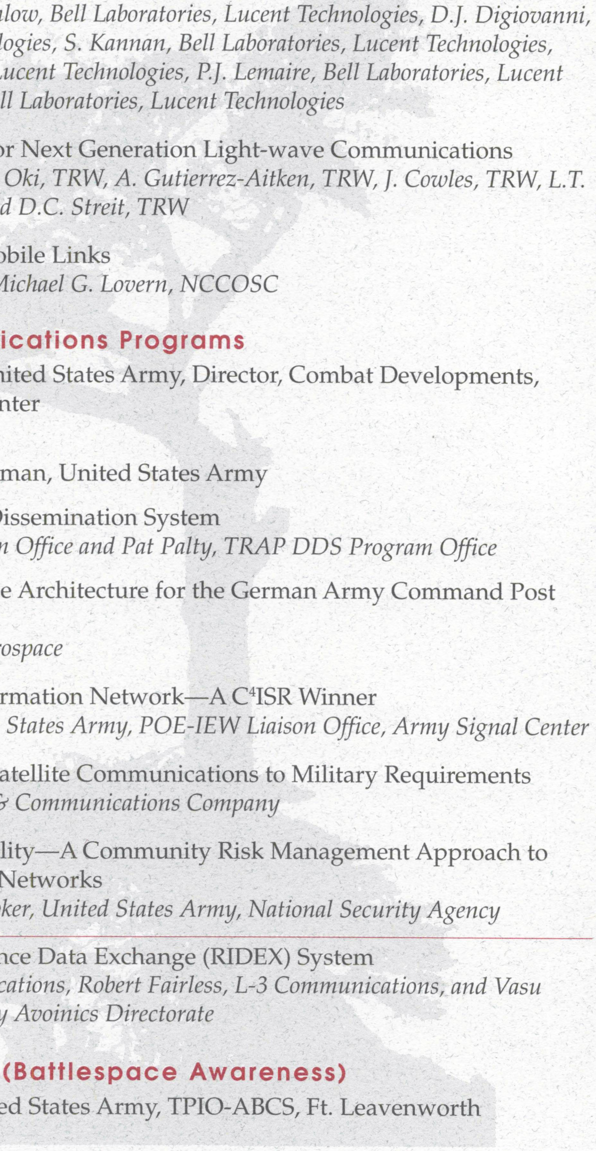
Chair Dr. Dennis Hall, TRW
Sponsor MILCOM 97

C1.1 Optical Intersatellite Links
Dr. Dennis Hall, TRW

C1.2 System Level Parametric Evaluations of Laser Communication Terminals
Robert G. Marshalek, Ball Aerospace and Technologies, Co.

C1.3 Adaptive Control of Transmitter Power in Free Space Laser Communication
Timothy E. Busch, United States Air Force Research Laboratory and Victor A. Skormin, Binghamton University

C1.4 Reliability Concerns for Double Clad Fiber Lasers for Space Based Laser Communications
Joseph A. Abate, Bell Laboratories, Lucent Technologies, J.R. Simpson, Bell Laboratories, Lucent Technologies, D.L. Brownlow, Bell Laboratories, Lucent Technologies, D.J. Digiovanni, Bell Laboratories, Lucent Technologies, S. Kannan, Bell Laboratories, Lucent Technologies, M.J. Luvalle, Bell Laboratories, Lucent Technologies, P.J. Lemaire, Bell Laboratories, Lucent Technologies, and A.J. Stentz, Bell Laboratories, Lucent Technologies



C1.5 INP-based HBT Technology for Next Generation Light-wave Communications
Kevin W. Kobayashi, TRW, A.K. Oki, TRW, A. Gutierrez-Aitken, TRW, J. Cowles, TRW, L.T. Tran, TRW, T.R. Block, TRW, and D.C. Streit, TRW

C1.6 Laser Communications for Mobile Links
Peter M. Poirier, NCCOS, and Michael G. Lovern, NCCOSC

9:15 am – 12:15 pm
Spanagel Hall
Room 421

Session C2 In-theater Communications Programs

Chair Colonel Scott Rodakowski, United States Army, Director, Combat Developments, United States Army Signal Center
Sponsor MILCOM 97
Organizer Lieutenant Colonel Bruce Ashman, United States Army

C2.1 Evolution of the TRAP Data Dissemination System
Jim Cooper, TRAP DDS Program Office and Pat Palty, TRAP DDS Program Office

C2.2 Decentralized Millimeter Wave Architecture for the German Army Command Post Communications Network
Bernd Gobert, Daimler-Benz Aerospace

C2.3 UAVs and the Warfighter Information Network—A C^{4}ISR Winner
Colonel Scott Long (ret.), United States Army, POE-IEW Liaison Office, Army Signal Center

C2.4 Applications of Commercial Satellite Communications to Military Requirements
Arthur Einhorn, Hughes Space & Communications Company

C2.5 Secret and Below Interoperability—A Community Risk Management Approach to Connecting Secret and Below Networks
Lieutenant Colonel Mark S. Loepker, United States Army, National Security Agency

C2.6† The Reconnaissance/Intelligence Data Exchange (RIDEX) System
Richard J. Saggio, L-3 Communications, Robert Fairless, L-3 Communications, and Vasu Chakravdrthy, Wright Laboratory Avoinics Directorate

9:15 am – 12:15 pm
Ingersol Hall
Room 122

Session C3 Data Visualization (Battlespace Awareness)

Chair Colonel James E. Bessler, United States Army, TPIO-ABCS, Ft. Leavenworth
Sponsor MILCOM 97
Organizer Dick Brown, United States Army

C3.1 Introduction
Colonel James E. Bessler, United States Army, TPIO-ABCS

C3.2 Terrain Data Visualization
Rick Craven, TPIO-ABCS and Dick Brown, TPIO-ABCS

No briefcases, portfolios, electronic recording devices, cameras, photography, computing equipment, cellular phones, or note taking is permitted at the classified sessions.

† US-only attendence

Monday
3 November

C3.3 Communications Network Architecture and Management for Joint Forces Operations Combat Identification
Dr. John Osmundson, Naval Postgraduate School and Dr. Michael Melich, Naval Postgraduate School

C3.4 Information Distribution Technology
Dr. Sam Chamberlin, Director, United States Army Research Laboratory

C3.5 Synthetic Environments
Colonel Thomas J. Pawlowski, III, United States Army, TRADOC Program Integration Office for Synthetic Environments

C3.6 Automated Decision Making Processes
Mike Barnes, United States Army Research Laboratory

C3.7 Joint Discussion—Battlespace Awareness
Colonel James E. Bessler, United States Army, TPIO-ABCS

Session C4 Encryption Systems, Doctrine, and Policies

9:15 am – 12:15 pm
Spanagel Hall
Room 321

Chair David Balenson, AR&E Cryptographic Technologies, Trusted Information Systems

Sponsor MILCOM 97

C4.1 Security Services API: Cryptographic API Recommendation Abridged Edition by NSA Cross-organization CAPI Team
Amy Reiss, National Security Agency

C4.2 Cryptographic Based Layered Security Frameworks
David Balenson, Trusted Information Systems and Dennis Branstad, Trusted Information Systems

C4.3 How Many Certification Authorities Are Enough?
Dr. Stephen Kent, BBN Corporation

C4.4 Global Grid Security Products
Richard Scalco, National Security Agency

C4.5 Tactical Global Grid INFOSEC: TACLANE KG-175
Jesse Newsom, National Security Agency

C4.6† A Status Report from the Enciphered Signal Analysis Effort
J. Louise Blessing, National Security Agency, Mark A. DeBels, National Security Agency, and Jeffrey S. Trojanowski, National Security Agency

Session C5 SATCOM Technology (Onboard Processors, Crosslinking, Antennas, Bandwidth Efficiency, and SNR Efficiency)

Tuesday
4 November

9:15 am – 12:15 pm
Ingersol Hall
Room 122

Chair Dr. Norman L. Swenson, Lockheed Martin Western Development Laboratories

Sponsor MILCOM 97

C5.1 A Worldwide Direct Broadcast SATCOM Paging
Thomas H. Shake, Massachusetts Institute of Technology Lincoln Laboratory

EHF up UHF down - no penetration
150 bps
- possible SCT future use

C5.2 An EHF SATCOM Testbed for Compatibility Testing and Advanced Technology Demonstration
Dr. William L. Greenberg, Massachusetts Institute of Technology Lincoln Laboratory

- made EHF EIS - MILSTAR uses it to test with

C5.3 Satellite Processor Architecture for EHF Data-Switched Communications
William S. Zuk, Massachusetts Institute of Technology Lincoln Laboratory

- alot of switching so as to use BW efficiently

C5.4 GMSK for Spread Spectrum MILSATCOM
C. Leonard Bennett, Raytheon E-Systems and Robert S. Smith, Raytheon E-Systems

- says use GMSK for FDMA etc. to reject Adjacent channel interference (ACI)

C5.5 Power Efficient Two-Dimensional Constellations: Generation, Pruning, and Partial Gray Coding
Frank Chethik, Lockheed Martin Western Development Laboratories, and David Feldman, Lockheed Martin Western Development Laboratories

How they come up with better codes for better Eb/No

C5.6 (to be announced)
John Pezzlo, Raytheon E-Systems

Teleports for DSCS
Huge data/voice switching networks
users = switch teleport — uplink DL users
merging commercial with Military

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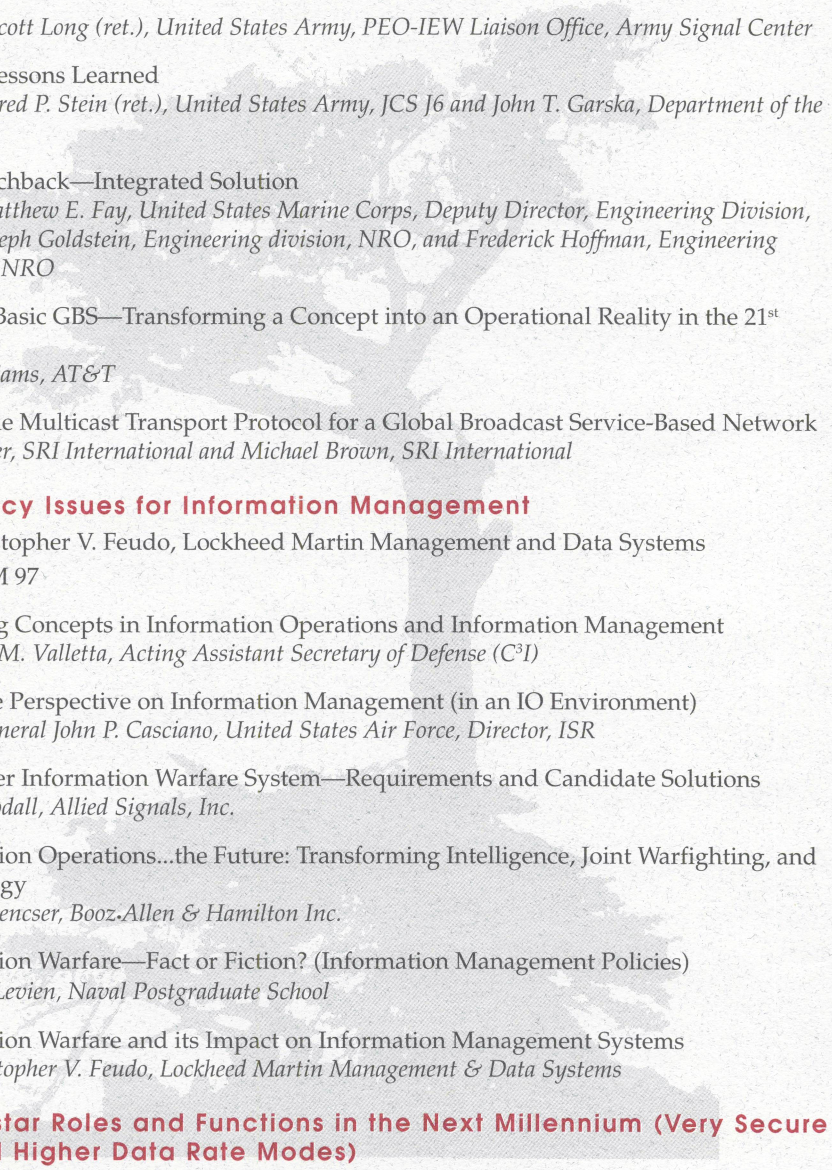

Tuesday
4 November

9:15 am – 12:15 pm
Spanagel Hall
Room 231

Session C6 Global Broadcast Satellite System (Capabilities and Operations)

Chair Commander David Baciocco, United States Navy, DODOSA
Sponsor MILCOM 97

C6.1 Intelligence Community Global Broadcast Service Requirements
Ronald D. Elliott, Director, Intelligence Systems Secretariat

C6.2 Mitigation of Co-channel Interference to GBS Through the Use of Interleaving
Stephen Martin, Lockheed Martin Missiles & Space and Eric Nettesheim, Lockheed Martin Missiles & Space

C6.3 Integrated Commercial SATCOM Database and Vulnerability Analysis Tools
James R. Periard, Syracuse Research Corporation, Paul Tremont, Syracuse Research Corporation, Mark Sloan, Syracuse Research Corporation, David Cain, Syracuse Research Corporation, and Brian Spink, Rome Laboratory

C6.4 Migrating to a Single Broadcast Format with the Integrated Broadcast Service (IDS vs GBS)
Colonel Scott Long (ret.), United States Army, PEO-IEW Liaison Office, Army Signal Center

C6.5 Bosnia Lessons Learned
Colonel Fred P. Stein (ret.), United States Army, JCS J6 and John T. Garska, Department of the Army

C6.6 GBS Reachback—Integrated Solution
Major Matthew E. Fay, United States Marine Corps, Deputy Director, Engineering Division, NRO, Joseph Goldstein, Engineering division, NRO, and Frederick Hoffman, Engineering Division, NRO

C6.7 Beyond Basic GBS—Transforming a Concept into an Operational Reality in the 21st Century
Wes Williams, AT&T

C6.8 A Reliable Multicast Transport Protocol for a Global Broadcast Service-Based Network
Fred Bauer, SRI International and Michael Brown, SRI International

9:15 am – 12:15 pm
King Hall Auditorium

Session C7 Policy Issues for Information Management

Chair Dr. Christopher V. Feudo, Lockheed Martin Management and Data Systems
Sponsor MILCOM 97

C7.1 Emerging Concepts in Information Operations and Information Management
Anthony M. Valletta, Acting Assistant Secretary of Defense (C^3I)

C7.2 Air Force Perspective on Information Management (in an IO Environment)
Major General John P. Casciano, United States Air Force, Director, ISR

C7.3 A Counter Information Warfare System—Requirements and Candidate Solutions
Jerry Woodall, Allied Signals, Inc.

C7.4 Information Operations...the Future: Transforming Intelligence, Joint Warfighting, and Technology
Mark Gerencser, Booz·Allen & Hamilton Inc.

C7.5 Information Warfare—Fact or Fiction? (Information Management Policies)
Dr. Fred Levien, Naval Postgraduate School

C7.6 Information Warfare and its Impact on Information Management Systems
Dr. Christopher V. Feudo, Lockheed Martin Management & Data Systems

9:15 am – 12:15 pm
Spanagel Hall
Room 421

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Session C8 Milstar Roles and Functions in the Next Millennium (Very Secure and Higher Data Rate Modes)

Chair Dr. Owen Roberts, Lockheed Martin Missiles & Space
Sponsor MILCOM 97

C8.1 Milstar's Role in the Defense Information Systems Network (DISN)
Major Justin Keller, DISA/D216 and Tomas Murphy, The Aerospace Corporation

Tuesday 4 November

C8.2 An Overview of the Advanced EHF Program Plan
Janice Smith, The Aerospace Corporation and Maurice King, The Aerospace Corporation

C8.3 EHF SATCOM for the Tactical Information Age Army
Captain Darius White, United States Army, United States Army Signal Center

C8.4 US Space Command Current Activities and Status
Lieutenant Colonel Ken White, United States Air Force, USSPACECOM/J6S

C8.5 SHF/Ka Wideband Concept Transition Architecture
Charles T. Barooshian, The Aerospace Corporation

C8.6 ENTERPRISE Joint Task Group 96-2 EHF Usage
Lieutenant Commander Dave Putnam, United States Navy, COMCRUSDESGRU-12, NAVSTA

Session C9 Adaptive Transmission Systems (Antijam, LPI, Antennas, and Spread Spectrum)

2:30 pm - 5:30 pm
Spanagel Hall
Room 231

Chairs Professor Edward W. Chandler, Milwaukee School of Engineering and Dr. Tim D. Jones, Lockheed Martin Western Development Laboratories

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C9.1 Matrix Amplified and Routing System (MARS) Analysis Program
X.T. Vuong, Science Applications International Corporation

C9.2 A Millimeter-wave Optical Nulling System
Peter A. Schulz, Massachusetts Institute of Technology Lincoln Laboratory, Scott R. Henion, Massachusetts Institute of Technology Lincoln Laboratory, Robert A. Brown, Massachusetts Institute of Technology Lincoln Laboratory, and Richard J. Magliocco, Massachusetts Institute of Technology Lincoln Laboratory

C9.3 Blind Demodulation/Equalization for Mobile Digital Radios
Michael Larimore, Applied Signal Technology, John Treichler, Applied Signal Technology, and Jeff Harp, Applied Signal Technology

C9.4 Directive Beamforming for a Rapidly Deployable Radio Network
Glen E. Prescott, University of Kansas and Craig A. Sparks, University of Kansas

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C9.5† Correlated Electronic Protection
Ralph Andrea, GTE Government Systems

Session C10 PCS and Other Wireless Systems (Cellular and Satellite Supported Adaption of Commercial Technology)

2:30 pm - 5:30 pm
Spanagel Hall
Room 421

Chair Dr. Niles A. Walker, Vice President, Satellite Ground Equipment, Stanford Telecommunications

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C10.1 UHF Geostationary Satellites for Military PCS
Dr. Reuben E. Eaves, Massachusetts Institute of Technology Lincoln Laboratory

C10.2 The Potential for Global Mobility to the Warfighter: Iridium® Service and Roaming Technology
Scott D. Blanchard, Motorola

C10.3 Wireless Warfighters Internet
Dr. David P. White, Massachusetts Institute of Technology Lincoln Laboratory

C10.4 The Use of Commercial SATCOM for Airborne Reconnaissance Applications
Daniel S. Colvin, Adroit Systems and Major Hon Kwan, United States Army, OUSD (A&T) DARO

C10.5 Tracking Mobile Assets
Anton B. Reut, ORBCOMM and Jerry Neuner, ARINC

C10.6† Mobile Satellite Services Program Potential System Enhancements
Mark D. Adams, The MITRE Corporation and Lieutenant Colonel J. Harvey Leister, United States Army, DISA

† US-only attendence

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Tuesday
4 November

2:30 pm - 5:30 pm
Spanagel Hall
Room 321

Session C11 Information Warfare (Spoofing, Jamming and Interception)

Chair	Captain James R. Powell, United States Navy, Chairman, Information Warfare and Tactical Analysis, Naval Postgraduate School
Sponsor	MILCOM 97
C11.1	National IW/IO Implementation, Policy, and Organizations *Captain Jake Schaffner, United States Navy, Joint Staff J39*
C11.2	IW/IO to the CINCs *Bill Swart, Technical Director, JC2WC*
C11.3	A Cyber Order-of-Battle for Information Warfare *Major Mark L. Huson, United States Air Force Academy/DFCS and Lieutenant Colonel Gregory B. White, United States Air Force Academy/DFCS*
C11.4	Reverse Engineering at JWAC: Telecom Network Analysis in a Data-sparse Environment *Ron Sinek, JWAC*
C11.5	RF Directed Energy Weapon Effects on Communications *Dr. Hriar Cabyan, Technical Advisor, Joint Staff J39*
C11.6†	An Introduction to DoD Information Operations *Major James H. McKinney, Jr., United States Air Force, Office of the Assistant Secretary of Defence, C^3I*
C11.7†	Design and Simulation of a Transform Domain Communication System *Captain Rodney A. Radcliffe, United States Air Force, HQ AFCA/TNSC and Major Gerald C. Gerace, United States Air Force, HQ AFCA/TNSC*
C11.8†	An Intelligent Jammer for Spread-Spectrum Systems *Captain Robert S. Parks, United States Air Force, WL/AAMW*
C11.9†	Universal Exciter Communications Electronic Attack Laboratory Results *John Eardley, Naval Research Laboratory, William W. Everett, Naval Research Laboratory, and Robert A. Weber, Naval Research Laboratory*

Wednesday
5 November

9:15 am – 12:15 pm
Spanagel Hall
Room 421

Session C12 Advanced Communications Techniques (Antijam, LPI, BWE, Frequency Reuse, New Carrier Frequencies, Fading, and Countermeasures)

Chair	Frank Chethik, Lockheed Martin Western Development Laboratories
Sponsor	MILCOM 97
C12.1	Bandwidth and Power Efficient Digital SATCOM Transmitter Topologies *Frank Chethik, Lockheed Martin Western Development Laboratories*
C12.2	Advanced EHF Waveform Tailored for Spectral Efficiency, Power Efficiency and Wide Dynamic Range *Dr. Dennis Rampton, Lockheed Martin Missiles & Space, Dr. Ed Meyer, Lockheed Martin Western Development Laboratories, and T. Kazemi, Lockheed Martin Western Development Laboratories*
C12.3	Downlink Advanced/EHF Backward Compatible Modulations with Small Adjacent Interference *Dr. Thomas Schonhoff, LinCom Corporation*
C12.4	Field Tests of Bandwidth Efficient Modulation on Commercial SATCOM Channels *Mark Ptak, Lockheed Martin Western Development Laboratories and Vincent Barnes, Lockheed Martin Western Development Laboratories*
C12.5	Jamming Performance of the Milstar II MDR Space Segment Payload *Joe McCuller, Hughes Space and Communications Company, Terry McCulloh, Hughes Space and Communications Company, Urban von der Embse, Hughes Space and Communications Company, Ken Huang, Hughes Space and Communications Company, Francis Thompson, Hughes Space and Communications Company, Esmail Yousesi, TRW, Steve Martin, Lockheed Martin Missiles & Space, Eric Nettesheim, Lockheed Martin Missiles & Space, and Art Yamada, The Aerospace Corporation*

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† US-only attendence

Wednesday
5 November

C12.6† A Novel Ultra Wideband (UWB) Communications System
Dr. Robert J. Fontana, Multispectral Solutions, Inc.

9:15 am – 12:15 pm
Spanagel Hall
Room 231

Session C13 Transportable and Mobile Satellite Earth Terminals (Deployable Antennas, Transmitters, and Switches)

Chair Dr. Manfred G. Unkauf, Raytheon E-Systems
Sponsor MILCOM 97

C13.1 The T3(H)-Rapidly Deployable SHF SATCOM for the Theater
Edward Valex, Program Management Office, MILSATCOM, Dalip Singh, Program Management Office, MILSATCOM, Manfred Unkauf, Raytheon E-Systems, and Ken Young, Raytheon E-Systems

C13.2 Submarine High Data Rate (SUB HDR) Multi-band Satellite Communications
Brian D. Lamont, Raytheon E-Systems and Nathan Liskov, Raytheon E-Systems

C13.3 Navy-Unique Challenges for Implementing MDR Terminals
Nathan Liskov, Raytheon E-Systems, Mario D'Amico, Raytheon E-Systems, and Richard Foley, Raytheon E-Systems

C13.4 Bandwidth on Demand Upgrade for SMART-T
Richard Coindello, Program Office, MILSATCOM, Alex Moy, Program Office, MILSATCOM, Manfred Unkauf, Raytheon E-Systems, and David Hendry, Raytheon E-Systems

C13.5 ATM Precedence and Preemption: An Interim Solution for MILSTAR MDR DAMA Networks
Richard Johnson, Raytheon E-Systems

C13.6 Low-Cost UFO/E Over-the-Air Rekey Concept Using Transparent Messages
Brian Rodriquez, Raytheon E-Systems and John Basel, Raytheon E-Systems

9:15 am – 12:15 pm
Spanagel Hall
Room 321

Session C14 Multilevel Secure Computer Systems and Architecture

Chair Dr. Cynthia E. Irvine, Naval Postgraduate School
Sponsor MILCOM 97

C14.1 A Client-Server Architecture Supporting MLS Interoperability with COTS Components
Judith N. Frosher, Naval Research Laboratory and M. H. Kang, Naval Research Laboratory

C14.2 Multi-level Security for CORBA Applications in DoD Computing Environments
Terry C. Vickers Benzel, Trusted Information Systems and E. John Sebes, Trusted Information Systems

C14.3 Securing the Coalition AOC
Jack Wool, ARCA Systems

C14.4 The Use of Trusted Systems to Solve Multi-level Security Problems in MISSI
Al Arsenault, National Security Agency

C14.5 Contingency Airborne Reconnaissance System—Operational MLS Intelligence Asset for Theater Commanders
Dr. David E. Gobuty, Lockheed Martin Western Development Laboratories

9:15 am – 12:15 pm
Ingersol Hall
Room 122

Session C15 Military Satellite Systems (AFSCN for DMSP, DSP, Communications, and Other Satellites)

Chair Dr. David Klinger, Lockheed Martin Missiles & Space
Sponsor MILCOM 97
Organizer Michael Cervi, Lockheed Martin Missiles & Space

C15.1 Copernicus and the Joint Maritime Communications Strategy cancelled
Abdallah I. (David) Daoud, Booz-Allen & Hamilton, Inc., Steven B. Harrell, Space and Naval Warfare Systems Command, and Allen Heaberlin, Space and Naval Warfare Systems Command

C15.2 German MILSATCOM Starting from Scratch—A System Concept until 2005
Thomas Sichert, IABG, Germany What is Germany doing?
Forming an European coop

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† US-only attendence

Wednesday
5 November

Change SHF to 3 band X, C, S, Ku, Ka etc
gather all sorts of data from A wx sat etc.

C15.3 Defense Meteorological Satellite Program Architectures Using the Global Broadcast System to Support the Reengineering of Air Force Weather
John Bohlson, The Aerospace Corporation, Colonel Benjamin James, United States Air Force, DMSP Program Office, and Larry Weeks, DMSP Program Office

we should get wx sat. data to E-4

C15.4 Adjacent Satellite Interference Issues Associated with DSCS III VSAT Links
X. T. Vuong, Science Applications International Corporation

only way to avoid interferece from adjacent terminals is co-op.

C15.5 Analysis and Optimization of an Airborne Triband Radome for the E-4B with Comparison to Measurements
Dr. B. Rama Rao, The MITRE Corporation

– gave Boeing credit still have heat issue

C15.6 Multi-beam Array Technology—An Advanced Package Technique
Jeffery A. Scorse, Sanders, A Lockheed Martin Company, John D. Kennedy, Sanders, A Lockheed Martin Company, and Byran Cleaveland, Sanders, A Lockheed Martin Company

good - [illegible] though

C15.7 Transmitter and Receiver Options for Milstar Paging
Brian K. Dumaine, TRW Electronics Systems and Technology Division and Christopher Moyer, Motorola

-1.7 link margin usless – sat paging!

C15.8 Demonstration of Milstar Integration into C^{4}I Architecture
Dr. Lew Leibowitz, Lockheed Martin Missiles & Space and Lieutenant Stephen Hill, United States Air Force, Space and Missiles Center

2:30 pm - 5:30 pm
Spanagel Hall
Room 321

Session C16 Array Antenna Systems

Chair Dr. Curt Schleher, Naval Postgraduate School
Sponsor MILCOM 97

C16.1 NASA's Mobile and Telecom Antenna Developments at JPL
John Huang, Jet Propulsion Laboratory

C16.2 Lightweight Agile EHF Multiple-Beam Antenna (MBA) with Eight Simultaneous Active Beams
H. Haddad, Hughes Space and Communication, D. Londre, Hughes Space and Communication, and D. Bressler, Hughes Space and Communication

C16.3 Design and Measurements of X-band Phased Array for DSCS Satellites
Dr. A.I. Zaghloul, COMSAT Laboratories, R.K. Gupta, COMSAT Laboratories, and J.I. Upshur, COMSAT Laboratories

C16.4 Multiple Beam Transmit Phased Array for Advanced EHF Application
Jack Macek, TRW

C16.5 44-GHz MMIC Nulling Beamforming Network for Advanced EHF Application
Sheng Chih Yang, TRW, Kevin Hubbard, TRW, Chetan Gandhi, TRW, Matt Trippett, TRW, Guan Cheng, TRW, Pat Courrielche, TRW, Nelson Lee, TRW, and Ron Squires, TRW

C16.6 A Low Profile Multifunction, Active ESA for High Data Rate Satellite Communications
Jay Edie, Hughes Aircraft Company and Bill Craig, NUWC

C16.7 Evolution of Continuous Transverse Stub Arrays in Communication Applications
Alec Ekmekji, Hughes Aircraft Company

2:30 pm - 5:30 pm
Spanagel Hall
Room 231

Session C17 Communication Networks on the Move

Chair Richard C. North, United States Navy, NCCOSC, RDTE Division
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C17.1 Autonomous System Implementations for Navy Afloat Groups
Roger Casey, NCCOSC, RDTE Division and Mark Stell, NCCOSC, RDTE Division

C17.2 Migratory Battlegroup Internet Architecture
Dr. Ramesh Rao, University of California, San Diego, An Chen, University of California, San Diego, and Albert Legaspi, NCCOSC, RDTE Division

C17.3 Data/Voice Communication over a Multihop, Mobile, High Frequency (HF) Network
Dennis J. Baker, Naval Research Laboratory

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Wednesday
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C17.4 Service Model and Cell Multiplexing for the Data and Voice Integration Advanced Technology Demonstration
James P. Hauser, Naval Research Laboratory

C17.5 NTDR Mobility Management Protocols and Procedures
Dr. John Zavgren, BBN Technologies, Inc.

C17.6 Video Transmission in a Non-Line-of-Sight Environment
Larry Levitt, Advanced Systems Concept Office, RDEC, United States Army Aviation and Missile Command

C17.7 HDR LOS Wireless Communication Network for US Naval Applications
Jerry Goodwin, ViaSat Incorporated, Mark Johnson, ViaSat Incorporated, Corey Johnson, ViaSat Incorporated, and Mike Geile, Nova Engineering

Session C18 Dynamic Bandwidth Management

2:30 pm - 5:30 pm
Spanagel Hall
Room 421

Chair Dr. Henry Huey, Lockheed Martin Western Development Laboratories
Sponsor MILCOM 97

C18.1 Integrated Information Management System for Defense Information System Network (DISN) ATM Services
Dr. Seyd Shah, Defense Information Systems Agency, Dr. Savvas Hadjipanteli, Defense Information Systems Agency, and Larry Bowman, Defense Information Systems Agency

C18.2 Broadband Satellite Network Design Based on Satellite-unique Analysis of Applications and Topologies
Aaron Falk, TRW

C18.3 An On-board Packet Processing Architecture for the Advanced EHF Satellite System
Dr. J. Scott Stadler, Massachusetts Institute of Technology Lincoln Laboratory and Eytan Modiano, Massachusetts Institute of Technology Lincoln Laboratory

C18.4 DAMA Multiple Access Assignment for Multimedia Services—Analytical Results
S.L. Kota, Lockheed Martin Western Development Laboratories, H. Huey, Lockheed Martin Western Development Laboratories, and D. Luciantoni, Lockheed Martin Western Development Laboratories

C18.5 Exploiting Dynamic Bandwidth Management with an AI-Based ATM Network Manager
Michael Martone, Booz•Allen & Hamilton, Inc.

Session C19 Infosec/Vulnerability

2:30 pm - 5:30 pm
Ingersol Hall
Room 122

Chair Sylvan Pinsky, National Security Agency
Sponsor MILCOM 97

C19.1 A Curmudgeon's View of the Internet
Dr. George Dinolt, Lockheed Martin Western Development Laboratories

C19.2 Applying the WDL Composition Theory to Analyze Security Architectures
Dr. Lee A. Benzinger, Lockheed Martin Western Development Laboratories, and Peter C. Baker, Lockheed Martin Western Development Laboratories

C19.3 Naval Postgraduate School Center for INFOSEC Studies and Research: Teaching the Science of Computer Security
Dr. Cynthia E. Irvine, Naval Postgraduate School

C19.4 Panel: Security is a Systems Problem
Sylvan Pinsky (moderator), National Security Agency, Al Arsenault, National Security Agency, Dr. Cynthia E. Irvine, Naval Postgraduate School, Dr. Lee A. Benzinger, Lockheed Martin Western Development Laboratories, Dr. George Dinolt, Lockheed Martin Western Development Laboratories, and David Balenson, Trusted Information Systems

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Global Command and Control System/ Global Broadcast System (GCCS/GBS) Laboratory

The Naval Postgraduate School (NPS) staff will demonstrate the GCCS/GBS Laboratory, showing its capabilities and operations as a worldwide GCCS nodal site. Demonstrations are in Root Hall, Room 202, and are open to all registered MILCOM 97 attendees.

Demonstrations are Monday, Tuesday, and Wednesday (3-5 November) at the following times: 9:15 am, 11:15, am, 2:30 pm, and 4:30 pm.

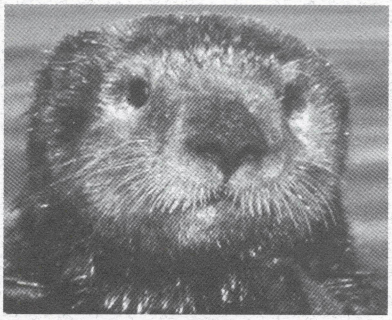
Attendance is limited to 20. Upon arrival, if that demonstration is full, tickets for future days and times will be available. Please arrive at least 5 minutes before demonstration start; sessions last approximately 60 minutes.

Computer Science Department Laboratories

The NPS Computer Science Department will offer a tour and demonstrations in the Computer Science Department Laboratories. Demonstrations, including Virtural Reality, MLS Security, Software Engineering, and Robotics, are in Spanagel Hall, Room 506, and are open to all registered MILCOM 97 attendees.

Demonstrations are Monday and Tuesday (3-4 November) at 2:30 pm.

Attendance is limited to 20. Upon arrival, if that demonstration is full, tickets for a future time will be available. Please arrive at least 5 minutes before demonstration start; sessions last approximately 90 minutes.



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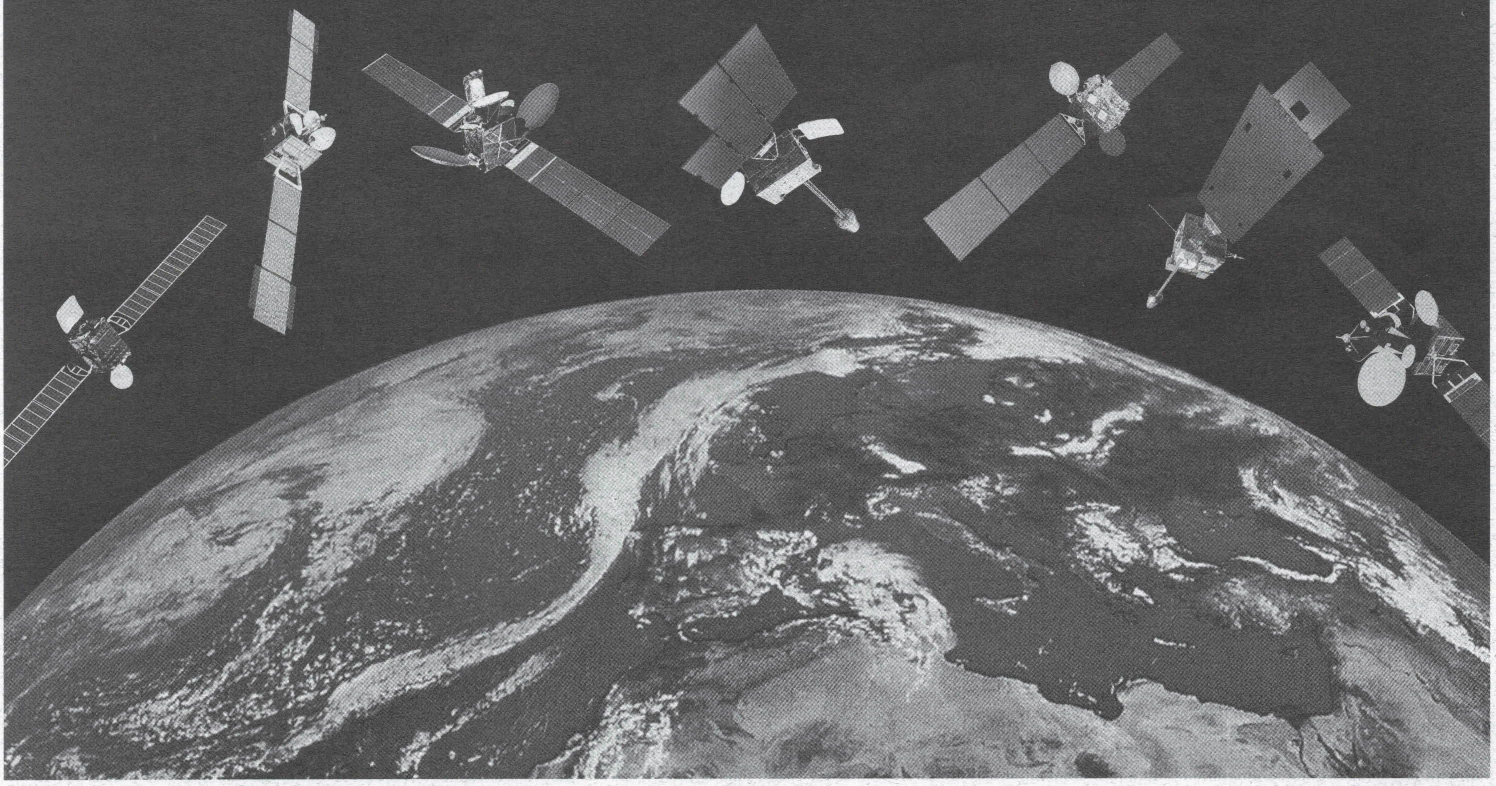

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Accommodations and Phone Numbers

Hotel Accommodations

MILCOM 97 conference headquarters is the Hyatt Regency Monterey. All unclassified technical sessions and panels, all luncheons, and the Chairman's banquet will be held there.

The address and phone numbers for the conference headquarters are:

Hyatt Regency Monterey
One Old Golf Course Road
Monterey, CA 93940
(408) 372-1234
(408) 375-3960 (fax)

Other Hotels Serving MILCOM 97

Other hotels supporting MILCOM 97 are listed below. A complimentary MILCOM 97 shuttle bus will run frequently between these hotels and the Hyatt Regency Monterey. Parking is very limited at the Hyatt.

Embassy Suites on Monterey Bay
1441 Canyon Del Rey
Seaside, CA 93955
(408) 393-1115
(408) 393-1113 (fax)

Hampton Inn Resort
(formerly Days Inn)
1400 Del Monte Boulevard
Seaside, CA 93955
(408) 394-5335
(408) 394-7125 (fax)

Holiday Inn Resort
1000 Aguajito Road
Monterey, CA 93940
(408) 373-6141
(408) 655-8608 (fax)
(800) 234-5697 (toll free)

Monterey Beach Hotel
2600 Sand Dunes Drive
Monterey, CA 93940
(408) 394-3321
(800) 242-8627

Best Western DeAnza Inn
2141 North Fremont Street
Monterey, CA 93940
(408) 646-8300
(800) 858-8775

Cypress Tree Inn
2227 North Fremont Street
Monterey, CA 93940
(408) 372-7586

Comfort Inn
2401 Del Monte Avenue
Monterey, CA 93940
(408) 373-7100

Phone Numbers

The following phone numbers may be useful during your stay at MILCOM 97.

Avis Rent-a-Car, Monterey Peninsula Airport
(408) 647-7140
(408) 373-1909 (fax)

Del Monte Golf Course
(408) 373-2436

Monterey Peninsula Airport
(408) 648-7000
(408) 373-2542 (fax)

United Airlines, Monterey Peninsula Airport
(800) 241-6522

Welcome Reception and Luncheons

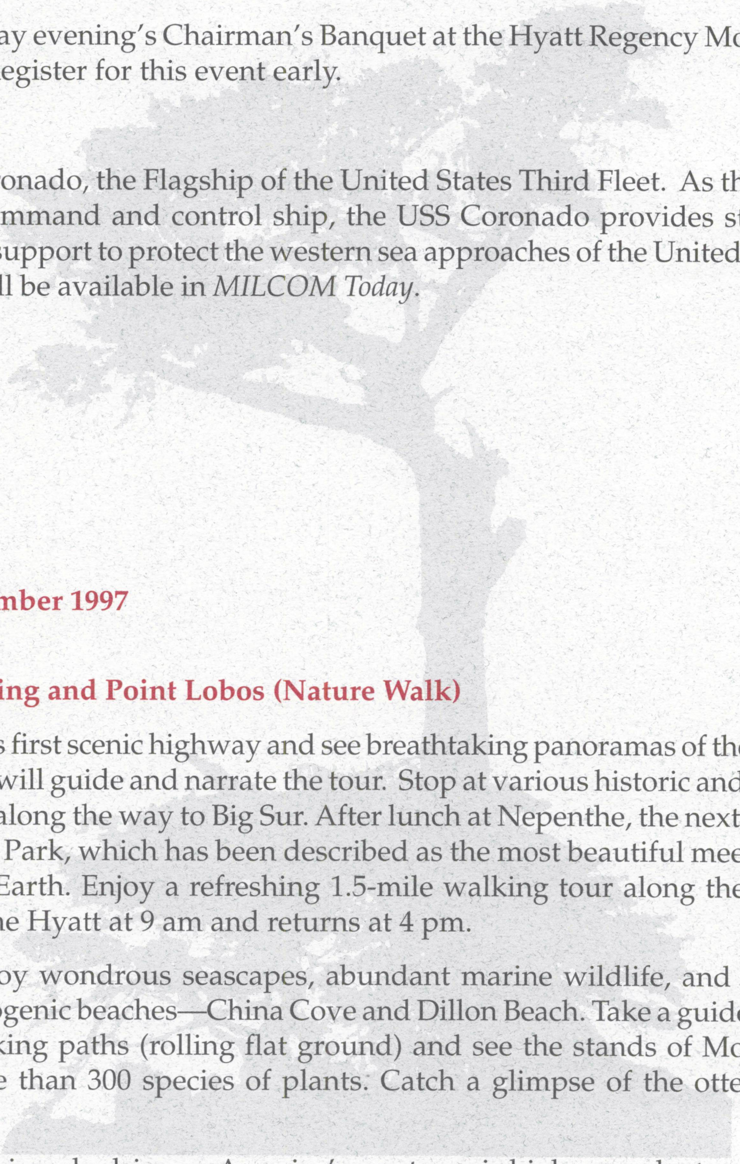
Luncheons and Sunday's Welcome Reception for MILCOM 97 are held at the Hyatt Regency Monterey. These are optional selections for guests and for conference participants who have not purchased the Full Conference package.

The Welcome Reception and lunches are priced at $30 each. The Welcome Reception price includes two beverage tickets. Luncheons are scheduled for Monday, Tuesday, and Wednesday.

Aquarium Social and Chairman's Banquet

Monday evening's social at the Monterey Bay Aquarium is $60; this is an opportunity to watch the ocean come to life. Mingle among the extraordinary marine life of the bay. The new Outer Bay Wing explores the vast open sea—a world where anchovies amass, jellyfish jive, and barracuda bunk. Encounter creatures and exhibits not seen in any aquarium.

Seating for Tuesday evening's Chairman's Banquet at the Hyatt Regency Monterey ($70) is limited. Register for this event early.



Tour of the USS Coronado

Tour the USS Coronado, the Flagship of the United States Third Fleet. As the Fleet Commander's command and control ship, the USS Coronado provides state-of-the-art, on-scene support to protect the western sea approaches of the United States. Tour schedule will be available in *MILCOM Today*.

Tours

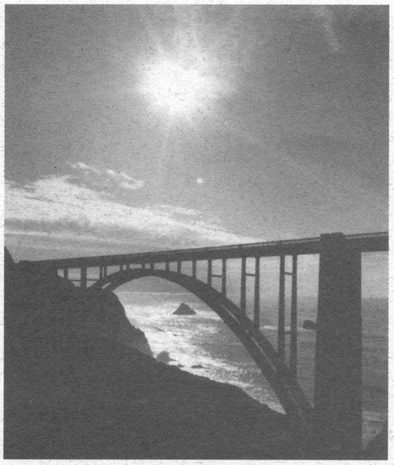


Photo: Bob Chapanot

Monday, 3 November 1997
9 am to 4 pm

Big Sur Sightseeing and Point Lobos (Nature Walk)

Travel California's first scenic highway and see breathtaking panoramas of the coast. A local naturalist will guide and narrate the tour. Stop at various historic and scenic points of interest along the way to Big Sur. After lunch at Nepenthe, the next stop is Point Lobos State Park, which has been described as the most beautiful meeting of land and sea on Earth. Enjoy a refreshing 1.5-mile walking tour along the coast. The tour leaves the Hyatt at 9 am and returns at 4 pm.

Point Lobos. Enjoy wondrous seascapes, abundant marine wildlife, and two of California's photogenic beaches—China Cove and Dillon Beach. Take a guided tour along scenic walking paths (rolling flat ground) and see the stands of Monterey cypress and more than 300 species of plants. Catch a glimpse of the otters and shore birds.

Big Sur. Enjoy a leisurely drive on America's most scenic highway; plenty of stops are planned to appreciate the views. The magic and timeless beauty will enchant you. Have lunch overlooking 50 miles of pristine coastline and visit local art galleries and gift shops.

$40 (includes lunch and fees for Point Lobos State Park)

Tuesday, 4 November 1997
10 am to 3:30 pm

Monterey Peninsula—17-Mile Drive—Wine Tasting

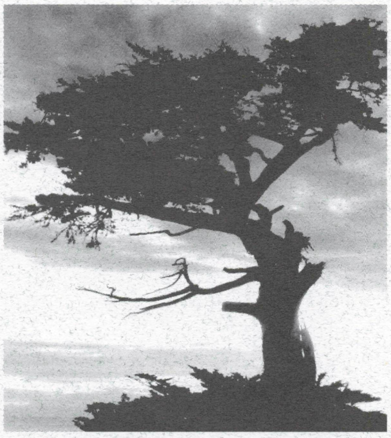


Photo: Bob Chapanot

Enjoy a narrated ride along the 17-Mile Drive through the Monterey peninsula from Monterey, Pacific Grove, Pebble Beach, and Carmel—lots of stops (opportunities to take the photograph of a lifetime)! The tour leaves the Hyatt at 10 am and returns at 3:30 pm. The tour showcases the panoramic views of the area including historic landmarks, old adobe buildings, and the Carmel mission. After lunch at Bradley Jones Restaurant at the Barnyard in Carmel, the tour continues to the Chateau Julien for a private tour and wine tasting.

The French country-style Chateau Julien winery is nestled on 16 acres in the valley at the foot of the Carmel Valley mountains. Stroll through the winery, sample Chateau Julien's wines, and discover the picturesque chateau with its stained glass windows, cathedral ceilings, and French and English antiques.

$35 (includes lunch and fees for the 17-Mile Drive)

Wednesday, 5 November 1997
10 am to 4 pm

Sightseeing and Shopping Shuttle Monterey—Cannery Row—Carmel

Photo: Bob Chapanot

Explore historic Monterey on a self-guided walking tour. Shop on the Wharf. See Cannery Row. Visit Carmel-by-the-Sea. A shuttle bus will operate continuously from the Hyatt to downtown Monterey (Wharf), to Cannery Row, to Carmel, and back to the Hyatt. Passengers may embark or disembark at any of these points throughout the day. The first shuttle will leave the hotel at 10 am, and the last shuttle will depart Carmel at 4 pm.

Historic Monterey Walking Tour. Take a self-guided walking tour along Monterey's Path of History. See the unique 19th century buildings including the Customs House and the first theater. The 19th century adobes and gardens are a charming glimpse of the pre-Civil War period. Actors in period costumes add to the realism and excitement at many historic buildings.

Visit the two wharves stretching side by side into the Monterey Bay. One wharf is lined with specialty shops, art galleries, seafood restaurants, and fish markets; the other is a working commercial fishing pier where you can watch boats unload their daily catch.

Cannery Row. John Steinbeck immortalized this area in his novels *Cannery Row* and *Sweet Thursday*. Browse through specialty shops, art galleries, wine-tasting rooms, or a factory outlet center. Just walk along the coast and enjoy the scenic beauty. Seals and otters lounge and play in the kelp beds offshore.

Carmel-by-the-Sea. Tiny specialty shops and galleries are tucked away in flower-filled courtyards—you can find more than 70 galleries within one square mile. Stroll through the quaint alleys and cobblestone walkways.

$12 per adult for an all-day pass (children under 18 ride free with an adult)

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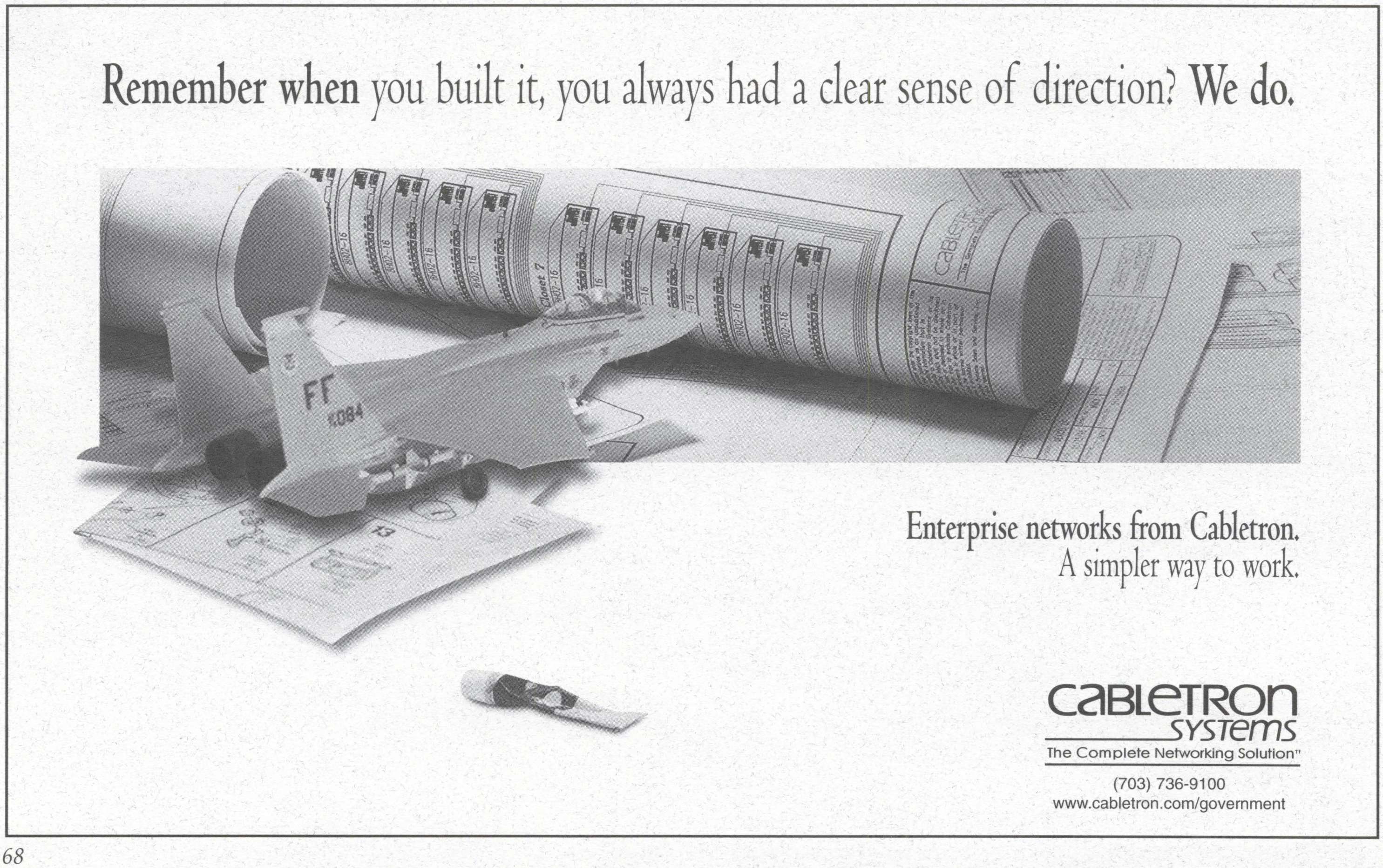

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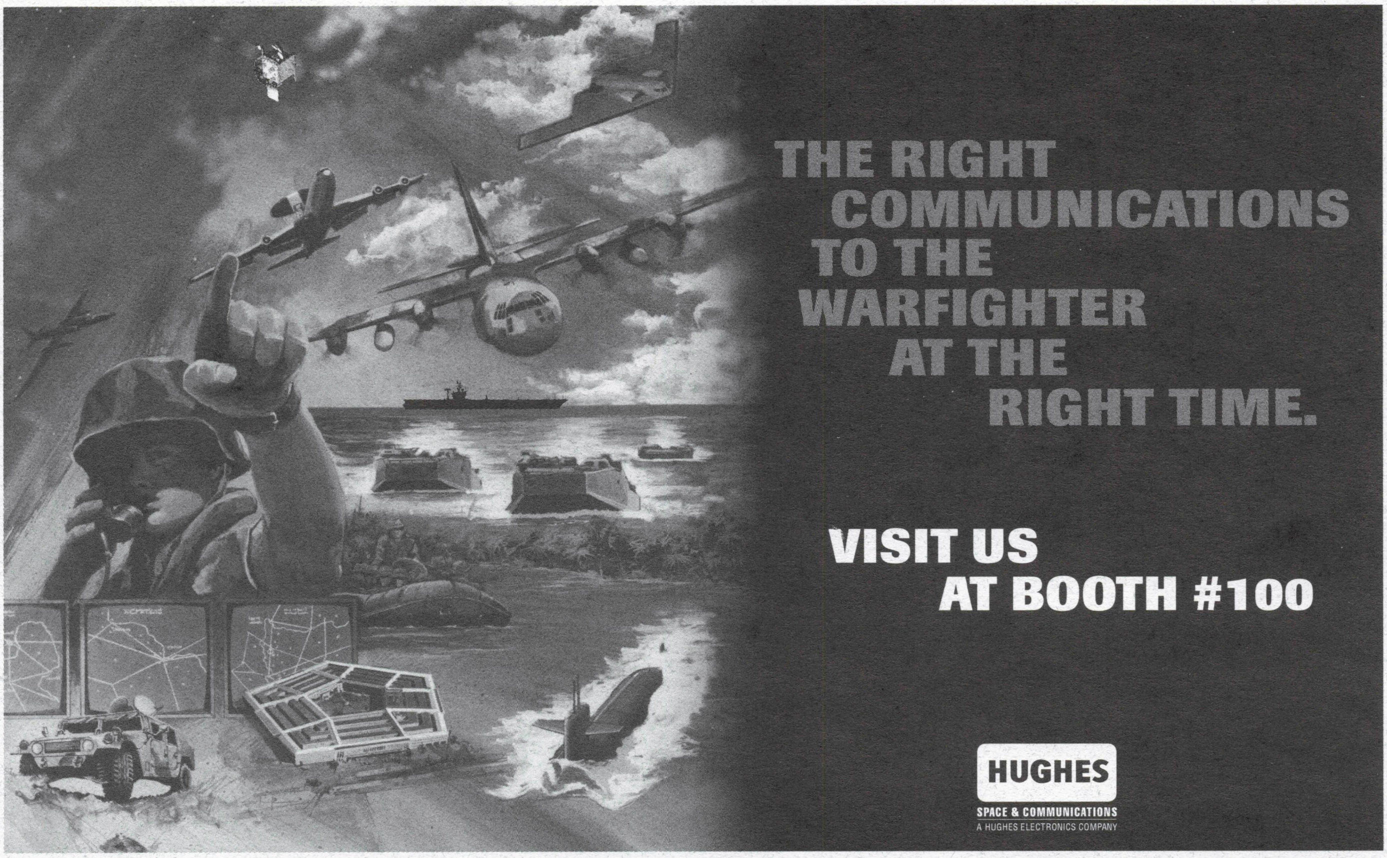
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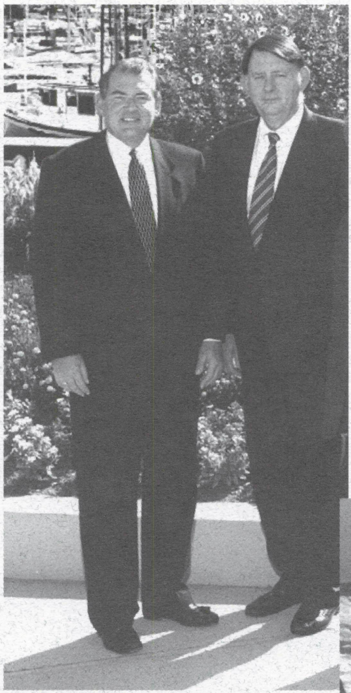
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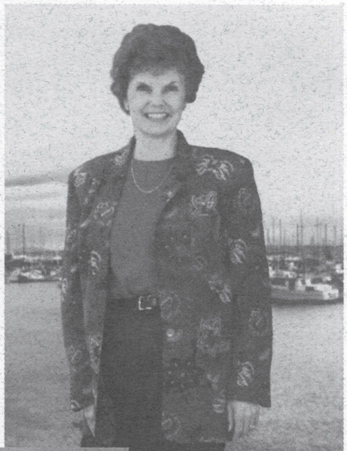
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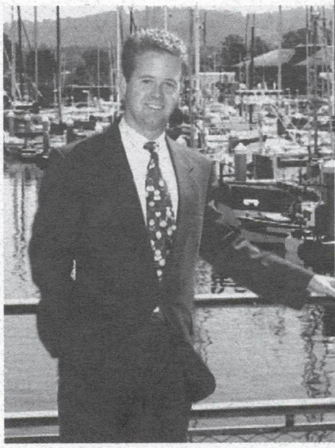

Lee Flanagin

Photos: Bob Chapanot

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Call For Papers

Force Projection
The Communications Challenge

MILCOM 98, to be held October 18-21, 1998 at Stouffer Renaissance, Bedford, MA, is soliciting both unclassified and classified papers (up to the level of SECRET: approval for foreign disclosure recommended) on military communications.

Please submit a one-page unclassified abstract and be prepared to submit five copies of the draft manuscript. With the abstract, include author names, affiliations, addresses, phone and fax numbers, and e-mail addresses; as well as whether the paper is to be presented in the unclassified or classified program. For papers with more than one author, indicate which author will serve as the point of contact. Abstracts are due January 14, 1998. Draft papers are due April 17, 1998.

Submit unclassified abstracts to Dr. David McElroy, address below, and classified abstracts to William T. Brandon, address below.

Suggested topics include:

Unclassified

Communication Systems:
- Satellite Communications; Global Grid; SATCOM Terminals and Payloads; GBS; Bandwidth On Demand Systems; Optical Communications; Systems Modeling and Simulation; Defense Messaging System

Mobile Communications:
- Communications On The Move; Tactical Communications; Wireless LANs; Personal Communications Systems; Exploitation Systems; UAV Communications; Wireless Mobile Networks

Networks:
- Broadband Tactical Networks; ATM and other Protocols for Military Networks; DAMA Networks; Satellite Network Management; Tactical Internet; Tactical Network Management

Communication Techniques:
- Advanced Modulation Techniques; Advanced Coding Techniques; Adaptive Signal Processing; Spread Spectrum Techniques; Synchronization Techniques; Low-Cost or Multi-Function Antenna Arrays

Signal Processing:
- ATM Processing; Fading Channel Communications; Adaptive Antenna or Communications Processing Systems; Interference Suppression; Satellite/Wireless Data Networking

Classified

Theater Systems:
- DII Integration; Army Architecture; Navy/USMC Architecture; Air Force Architecture; Intelligence Distribution; OOTW C4I Challenges

Tactical Systems:
- Army Programs; Navy/USMC Programs; Air Force Programs; Joint Programs; LPI/LPD Communications; UAV Communications

Satellite Systems:
- SATCOM Developments; Army SATCOM; Navy/USMC SATCOM; Air Force SATCOM; Intel SATCOM; Next Generation SATCOM

Advanced Technologies:
- Information System Security; Battlespace Awareness; Information Survivability; Bandwidth On Demand; Advanced Antenna Systems; Modeling and Simulation

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MILCOM 97

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Please insert a number code from the corresponding lists for each section

A ___ Plant ___ Own work B ___ Your principal function C ___ Your principal responsibility D ___ Your title

A. Primary end product (or service) performed at your plant, and the product (or service) that is your own work

1. Computers
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3. Software
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7. Navigation and guidance systems and equipment
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14. Medical electronic equipment
15. Companies within OEM incorporating electronics in their end product (not elsewhere classified)
16. Independent/university research, test/design labs, and consultants (not connected with a manufacturing company)
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19. Telecom services, telephone (including cellular)
20. Broadcast service (TV, cable, radio)
21. Transportation services (airline, railroad, etc.)
22. Computer/communications and data processing services
23. Power production/generation/transmission and distribution
24. Other commercial users of electrical/electronic equipment and services (not elsewhere classified)
26. University, college/other educational institutions, libraries
27. Others allied to the field (explain):

B. Your principal function

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2. Engineering manager
3. Project leader, manager, or engineer
4. Research and development manager
5. Design engineering manager
6. Member of technical staff
7. Research and development engineer
8. Design/development engineer
9. Software engineer
10. Basic research
11. Computer scientist
12. Scientist, physicist, or mathematician
13. Marketing, sales, or purchasing
14. Electrical/electronics engineer (not elsewhere specified)
15. Engineer (not elsewhere specified)
16. Dean, professor, or instructor
17. Engineering/computer science student (including graduate study)
18. Retired
19. Other professional/technical (explain):

C. Your principal responsibility

1. Management other than engineering
2. Engineering and scientific management
3. Engineering design
4. Engineering/physicist/scientist
5. Software management
6. Software scientist/engineer

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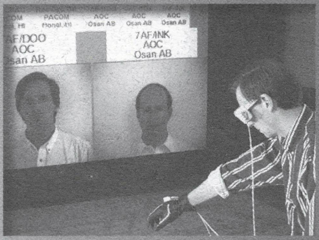

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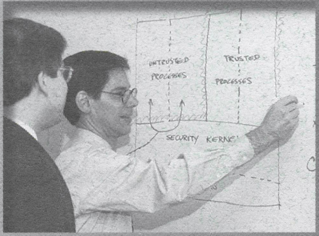

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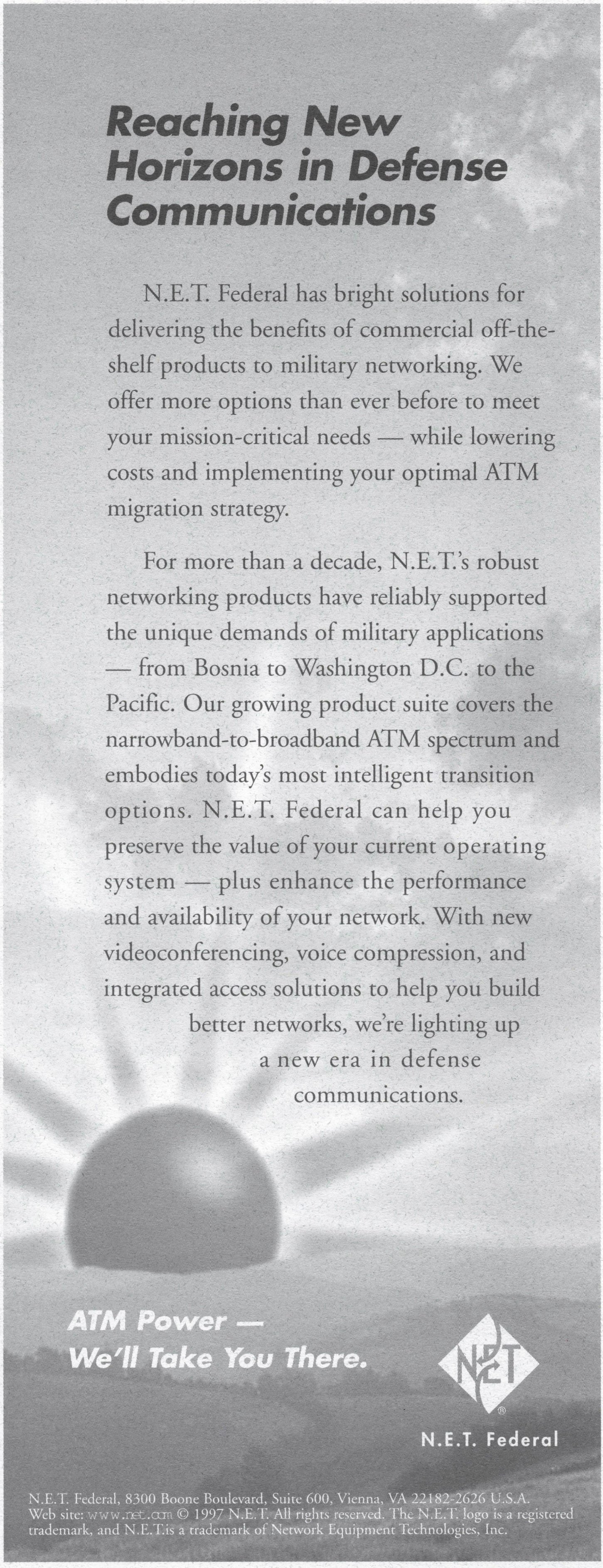

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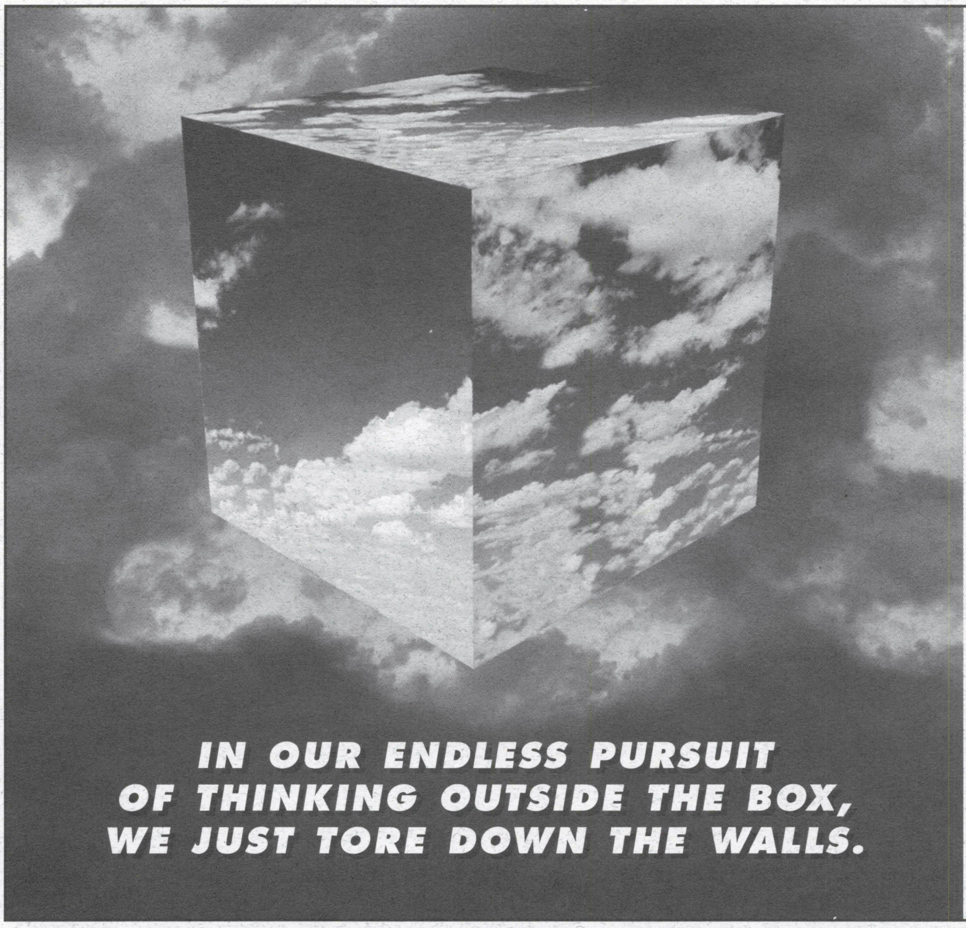
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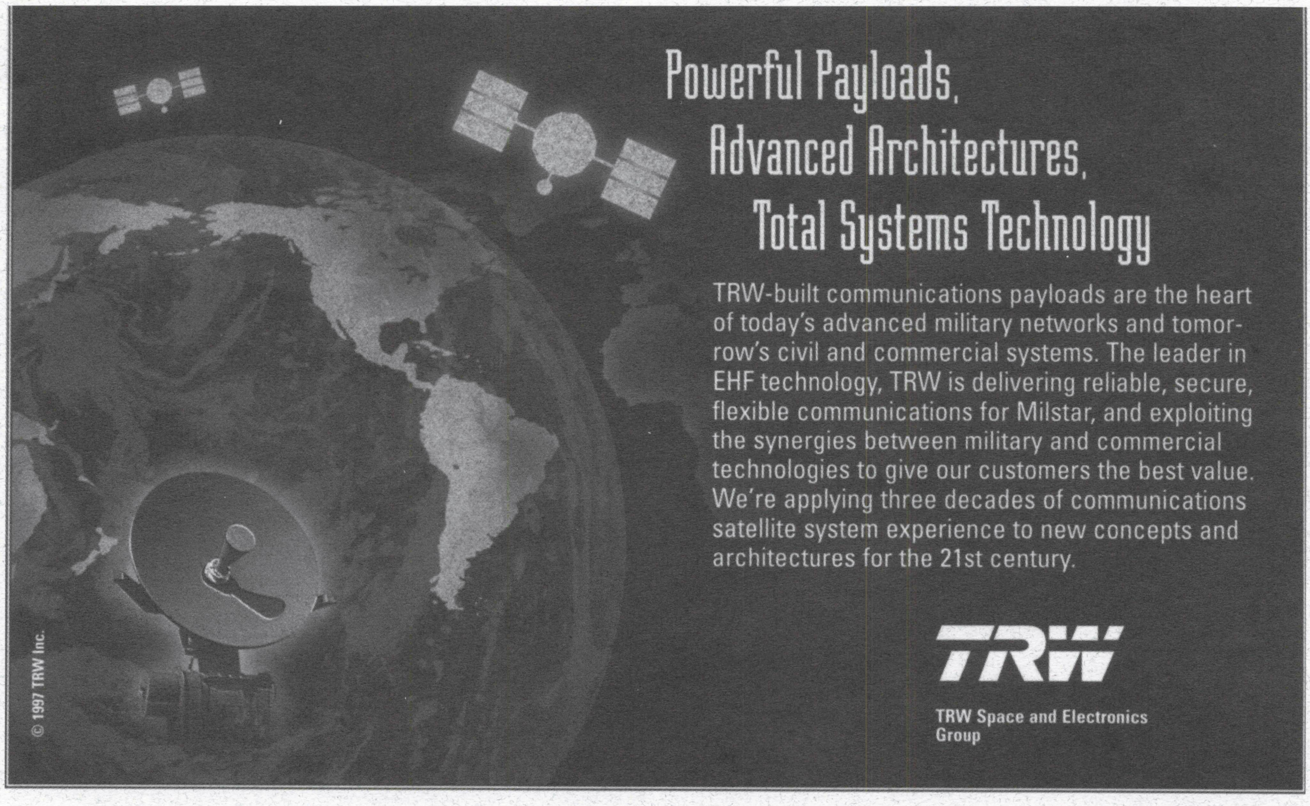

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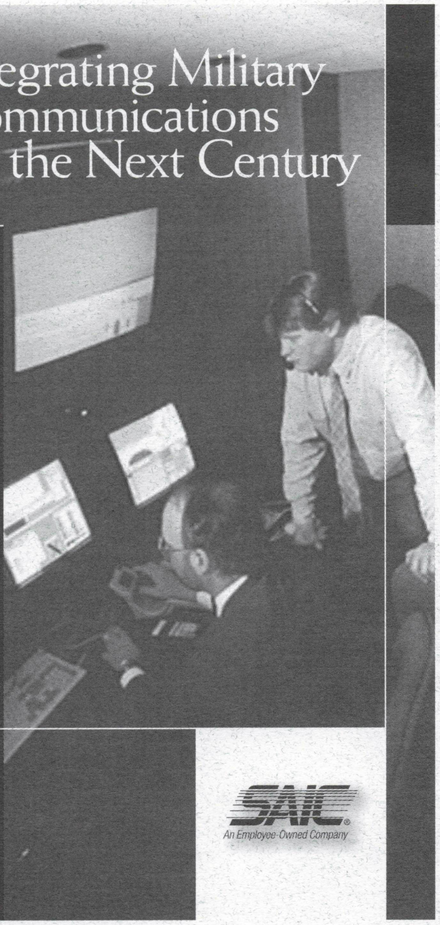

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Raytheon Electronic
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Author Index

Author and Session Number(s)

A

Abate, Joseph A. 25, C1
Abbe, Brian S. 11
Adams, Ed R. 36
Adams, Mark D. C10
Addison, Edwin R. 42
Agarwal, Anil 13
Ahlin, Lars 10
Akins, Alan J. 13
Al-Dhahir, Naofal 3
Ali, Irfan 3
Andrea, Ralph C9
Archer, Steve 24
Armer, Paul D. 19
Armstrong, Terry 6
Arsenault, Al C14, C19
Arthur, Paul 1
Asenstorfer, John A. 9
Axford, Roy A. 24

B

Bae, Jinsoo 21
Bae, MyungJin 14
Bailey, T. Glen 4
Baker, Dennis J. C17
Baker, Peter C. C19
Bakhru, Kesh 42
Balenson, David C4, C19
Ball, M. 10, 33
Bannister, Joseph 24
Bao, Jeffrey Q. 29
Baraniecki, Marion 14
Baras, J.S. 10, 27, 33, 35
Bard, Dr. John D. 32
Bardenhagen, Steven T. 14
Bark, Gunnar 28
Barnes, Mike C3
Barnes, Vincent C12
Barnett, William T. 39
Barooshian, Charles T. C8
Basch, Bert 6
Basel, John C13
Bass, Tim 5, 30
Bataille, Philippe 8
Bauer, Fred 24, 26, C6
Baum, Professor Carl W. 1, 8, 15
Beale, Jr., Frederick T. 35
Bekas, A.J. 34
Belanger, David J. 38
Bello, Phillip A. 41
Bennett, C. Leonard C5
Benzel, Terry C. Vickers C14
Benzinger, Dr. Lee A. C19
Berger, Gerald L. 39
Bergstrom, Chad S. 23
Bernstein, Steven 19
Berry, Johnny 40
Bessler, Colonel James E. C3
Beyer, David A. 34
Bezwada, Hari 4, 13
Bhattacharya, Tarun Kumar 29
Bill Craig, C16
Binnion, Jim 34
Bitar, Nabil 17
Bivens, Gretchen 4, 13,19
Blanchard, Scott D. C10
Blessing, J. Louise C4
Block, Fred J. 8
Block, T.R. C1
Bohlson, John C15
Boiteau, Denys 36
Bond, James W. 2
Borchelt, Timothy E. 5
Bordetsky, A. 6
Boser, Carol S. 20
Bosnor, Wayne 32
Bostrom, Gregory A. 24
Boukli-Hacene, M. 15
Bowman, Larry C18
Boyle, James 33
Bradley, Mark K. 35
Brady, Deborah A. 42
Branstad, Dennis C4
Braun, Robert D. 14
Bressler, D. C16
Britton, Matthew S. 16
Bromirski, Marek 12, 40, 42
Brown, Dick C3
Brown, Jr., Martin P. 4
Brown, Kathy L. 14
Brown, Michael 26, C6
Brown, Robert A. C9
Brownlow, D.L. 25, C1
Bryan, T. James 32
Buda, Fabien 1
Buddenberg, Rex 26
Buljore, S. 29
Burakowski, W. 12
Burley, S. 2
Burns, Commander Christopher S. 31
Busch, Timothy E. C1

C

Cabyan, Dr. Hriar C11
Cain, David C6
Cameron, A. G. 11
Campbell, Michael 24
Campbell, W. M. 29
Casciano, Major General John P. C7
Casey, Roger C17
Chakravdrthy, Vasu C2
Cavalier, Mark G. 7
Chamberlin, Dr. Sam C3
Chan, C. Chiu 39
Chandler, R. 2
Chang, Li Fung 18
Chang, Shue-Lee 36
Chang, Taejoo 7
Chen, An C17
Chen, Jiun-T. 22
Cheng, B. 13
Cheng, Guan C16
Chethik, Frank C5, C12
Childs, Lois C. 20
Chitre, D. M. 25
Choi, Junho 25
Christensen, PhD, Eric 16
Christophe, Grimault 4
Chu, Michael J. 3
Chuprun, J. Scott 23
Chuprun, Scott 34
Cichon, Ewald Gobel 7
Cirincione, Gregory 30
Cirineo, A. 11
Cleotelis, Dave 35
Cleaveland, Byran C15
Cleveland, J.R. 7, 11, 28
Climek, Dave 32
Coffing, Daniel L. 35
Cohen, Gary N. 37
Coindello, Richard C13
Colvin, Daniel S. C10
Colvin, Thomas C. 32
Comley, Vivian E. 36
Conner, Keith F. 15
Cook, Stephen C. 9
Cook, William L. 4
Cooper, Jim C2
Corson, M. S. 35
Corson, S. 10
Cotner, Calvin B. 38
Coulliette, David L. 12
Courrielche, Pat C16
Cowles, J. C1
Craighill, Earl 32, 34
Craven, Rick C3

D

D'Amico, Mario C13
Dai, Sa 27
Daoud, Abdallah I. (David) C15
Darnell, M. 2
Darnell, Michael 28
Datacom, Racal 13
Davis, Barry W. 11
DeBels, Mark A. C4
DeLuca, Dana M. 37
DeMatteis, Cheryl 24
Dennis, Tom 34
Devalla, B. 20
Dickerson, Julie 23
Dieter J. 7
Dietz, John F.W. 35
Digiovanni, D.J. C1
Digiovanni, David J. 25
Dinolt, Dr. George C19
Diouris, J. F. 29
DiPierro, Stef 11
Doroslovacki, Milos 29
Dowey, William S. 37
Driscoll, Daniel J. 12
Duale, Ali Y. 20
Dukes-Schlossberg, Jon 17
Dumaine, Brian K. C15
Duncombe, Christopher B. 40
Durkin, James F. 13
Dybdal, Robert B. 7
Dyson, Deborah A. 18
Dzik, Theodore J. 19

E

Eardley, John C11
Eaves, Dr. Reuben E. C10
Edwards, Reuben C. 22
Eggertson, K. F. 11
Einhorn, Arthur C2
Ekmekji, Alec C16
Elliott, Ronald D. C6
Elmore, Donald C. 38
Eng, Thomas 2
Englund, Eva 10
Ennis, Margaret 16, 34
Ephremides, Anthony 41
Evanoff, George A. 24
Everett, William W. C11
Everitt, David 13

F

Fairless, Robert C2
Falk, Aaron C18
Fang, Juing 1
Farquhar, Stuart 22, 28
Farrey-Goudreau, Ellen 20
Fay, Major Matthew E. C6
Fecko, Mariusz A. 19
Feldman, David C5
Felstead, Barry 2
Fergus, Perry 13, 37
Feudo, Dr. Christopher V. C7

Fleming, James R. 25
Fligor, David 13,37
Flynn, Leslie T. 38
Foldvik, Randy 27
Foley, Richard C13
Fonnesbeck, Dale 38
Fontana, Dr. Robert J. C12
Fonzo, Anthony G. 35
Fowler, Joan 30
Franco, Jose 10
Franke, Ernie 35, 38
Frivold, Thane 34
Frosher, Judith N. C14
Fuglestad, Mark R. 37

G
Gallagher, David M. 4, 12
Gandhi, Chetan C16
Garcia-Luna-Aceves, J. J. 12, 27, 34
Garhart, Jack S. 35
Garska, John T. C6
Gass, Jr., John H. 22
Geile, Mike C17
Gerace, Major Gerald C. C11
Geraniotis, Evaggelos 3, 7
Gerencser, Mark C7
Gibson, D. 4
Giles, Timothy C. 28
Girardi, Phil 27
Gobert, Bernd C2
Goeckel, Dennis L. 23
Goguty, Dr. David E. C14
Goiser, Alois M. J. 1, 2, 9, 28
Golan, Edward 35
Goldstein, Fred 11
Goldstein, J. Scott 29
Goldstein, Joseph C6
Goncu, G. 13
Goodwin, Jerry C17
Gossink, Don E. 9
Graham, Cecil 11
Grant, Tim 27
Greenberg, Dr. William L. C5
Gringeri, Steven 6
Griswald, Stan 34
Gudaitis, Captain Michael 32
Gupta, R.K. C16
Gupta, S. 33
Gutierrez-Aitken, A. C1
Guzek, Amy M. 23

H
Haas, Zygmunt J. 19, 41
Habib, I. W. 13
Haddad, H. C16
Hadjipanteli, Dr. Savvas 6, C18
Haimovich, A. M. 29
Hall, Dr. Dennis C1
Hammond, Charles 13,19
Hampel, Dan 11
Haratym, Jan 12
Harp, Jeff C9
Harrell, Steven B. C15
Harrington, Ed 18
Hartwig, Jr., George W. 20
Hauser, James P. C17
Haykin, Simon 29
He, Shiping 15, 22
Heaberlin, Allen C15
Hendrickson, Richard 31
Hendry, David C13
Henion, Scott R. C9
Hershey, John E. 3
Hessel, Cliff 15
Hicks, Bob 34
Hill, Douglas A. 36
Hill, Lieutenant Stephen C15
Hill, Peter C.J. 36
Hinman, Richard D. 32
Hinnawi, Nabil 17
Hirshfield, Edward 3
Hobson, Eric P. 4
Hoffman, Frederick C6
Hoffmeyer, James A. 32
Honary, Bahram 1, 22
Honig, Michael L. 23
Hsing, D. 13
Hsing, Deh-Phone 33
Huang, John C16
Huang, Ken C12
Hubbard, Kevin C16
Huey, H. C18
Hui, Stefen 2
Humphrey, Michael E. 17
Hunt, Bernard 1
Hurd, Terry R. 38
Hurthere, John E. 31
Huson, Major Mark L. C11

I
Inatti, Jari 8
Ikram, N. 37
Iltis, Ronald A. 23
Inselberg, Armond D. 20
Irvine, Dr. Cynthia E. C19
Isohookana, Matti A. 2
Ivers, Andy 35

J
Jacobs, Stuart 30
Jain, Ravi 18
James, Colonel Benjamin C15
Jang, K. 10, 35
Janoso, Richard F. 12
Jaroszynski, Maciej 35
Jay Edie, C16
Jimenez, Jesus 1
Johnson, A. F. 7
Johnson, Clifford T. 11
Johnson, Corey 17
Johnson, Eric E. 16
Johnson, Maril 17
Johnson, Richard C13
Joiner, Laurie L. 1
Jones, Norman G. 35
Jong, Je-hong 9
Jonsson, Christian 10
Josephson, Bill 18
Ju, Timothy 35
Junkins, Douglas A. 35
Juntti, Juhani 2, 9
Juntti, Markku J 8

K
Kalyanasundaram, Pramod 33
Kang, Joseph H. 1
Kang, Keebom 3
Kang, M. H. C14
Kannan, Anand 23
Kannan, S. C1
Kannan, Sriraman 25
Kant, L. 13
Katsoulis, George 8
Katz, Martin 13, 19
Kazemi, T. C12
Keller, Major Justin C8
Kelsch, Geoffrey R. 5
Kennedy, John D. C15
Kent, Dr. Stephen C4
Khasnabish, Bhumip 6
Khatib, H. H. (Sam) 10
Kiasaleh, Karman 1
Kielty, John 10
Kim , Yun Hee 36
Kim, Hong Gil 23, 36
Kim, Hyung-Myung 7
Kim, John C. 27
Kim, JongDeuk 14
Kim, Kwang Soon 21, 36
Kim, Suk Chan 7
Kim, Sun Yong 21
Kim, Yun Hee 23
King, Maurice C8
Kingsley, Lawrence E. 13
Kittel, Kai 36
Klieder, J. E. 29
Klinker, J. Eric 37
Kobayashi, Kevin W. C1
Komo, John J. 1
Kopertowski, Z. 12
Kota, S.L. C18
Kouar, M. 15
Kovach, Kurt M. 35
Kraetzl, Miro 16, 31
Kratochwil, Konrad 23
Krebs, Ronald E. 30
Kreitzer, Kevin C. 38
Kressel, Ulrich 36
Kroon, Jeffrey A. 40
Krupp, Peter 20
Ksienski, David A. 7
Kubiak, Ireneusz 7
Kumpumaki, Timo 2
Kupst, Shirley 6
Kwan, Major Hon C10

L
Lacetera, Joseph 16
Lallo, Pauli 15, 28
Lambert, Mark 39
Lamont, Brian D. C13
Larimore, Michael C9
Lay, Richard 28
Le, Anh Q. 25
Leconte, Michel 16
Lee, A. 4
Lee, C. H. 41
Lee, Hee C. 33
Lee, Jhong S. 31
Lee, Jooshik 21
Lee, Min Joon 23
Lee, Min Sou 7
Lee, Myung J. 26
Lee, Nelson C16
Lee, Seong Ro 21
Lee, Seoyoung 23
Lee, Yongwon 17
Legaspi, Albery C17
Lehnert, James S. 8
Lehrer, Nancy 17
Leibowitz, Dr. Lew C15
Leistensnider, James 20
Leister, Lieutenant Colonel
J. Harvey C10
Lemaire, P. J. C1
Lemaire, Paul J. 25
LeMartret, Christophe J. 36
Levannier, Gaston 8
Levesque, Allen 18

Author Index (cont)

Author and Session Number(s)

Levien, Dr. Fred C7
Levitt, Larry C17
Lewis, Arianne 6
Lewis, Hugh C. 25
Lewis, Mark G. 18, 34
Li, C. 19
Li, M. 35
Li, Pen 3
Liang, Jen-Wei 22
Liebowitz, Burt H. 25
Lilleberg, Jorma O. 8
Lin, Chinglan 39
Lindell, Robert 24
Liskov, Nathan C13
Litva, John 15, 22
Liu, Changdong 26
Liu, Shang-Chieh 7
Liu, Tien-Yow 21
Liu, Y. J. 5
Lo, Gerald 25
Lo, Gerald J. P. 16
Lo, Titus 15, 22
Loepker, Lieutenant Colonel Mark S. C2
Lobejko, Wieshaw 42
Loh, Siew-Kee 2
Loiselle, Captain James 24
Londre, D. C16
Long , Colonel Scott (ret.) C2, C6
Loos, Timothy S. 14, 37
Loso, Francis G. 34
Lovern, Michael G. C1
Lu, Ning H. 17
Lu, Shan 14
Luciantoni, D. C18
Luka, Gabor 13, 37
Lundy, G.M. 34
Luvalle, M.J. C1
Luvalle, Michael J. 25

M
Macek, Jack C16
Macker, Joseph P. 26
Magliocco, Richard J. C9
Maguire, Gerald Q. 10
Mai, Loc 36
Main, P. Michael 6
Malghan, R. 13
Markowski, Michael J. 41
Marshalek, Robert G. C1
Marsic, PhD, Ivan 12
Martin, Robert 34
Martin, Stephen C6
Martin, Steve C12
Martone, Michael 40, C18
Marvel, Lisa M. 20
Mathew, Dr. Athimoottil 22
Matolak, David W. 11
Matos, T. 8
Maundrell, Mel 1
Maurer, Peter D. 38
Mazzei, James 40
McAdams, Thomas J. 17
McChesney, James R. 31
McConnell, Jon 16
McCrickard, Thomas L. 35
McCuller, Joe C12
McCulloh, Terry C12
McDonough, Martin 11
McHenry, John R. 24
McKinney, Jr., Major James H. C11
McKinney, Thomas H. 11
McMahon, Michael 19
McNew, Justin P. 1
McPherson, Wayne 36
Meadows, David N. 25
Meals, Thomas S. 24
Medley, Michael J. 16, 23
Mehravari, Dr. Nadar 6, 12
Melich, Dr. Michael C3
Menell, Raymond 19
Mettke, Mike 9
Meyer, Dr. Ed C12
Midwinter, M. P. 28
Mihelcic, David M. 37
Mihram, PhD, Danielle 30
Mihram, PhD, G. Arthur 30
Miller, Leonard E. 31
Miller, Scott L. 22
Mills, Donald 38
Milstein, L. 29
Mirchandani, Vinod 13
Misra, A. 35
Modiano, Eytan 17, C18
Moore, D. Aretha 30
Moore, Todd 22
Moose, Paul H. 24
Morin, Gilbert A. 2
Mouldin, Richard B. 11
Moy, Alex C13
Moyer, Christopher C15
Muhonen, John 4
Mundie, William L. 24
Murad, Ahsun H. 16
Murphy, Tomas C8

N
Nelson, Robert 3
Nettesheim, Eric C6, C12
Neuner, Jerry C10
Newman, Dr. Eugene 32
Newsom, Jesse C4
Ng, Boon C. 22
Nguyen, Gam D. 41
Nilsson, Jan E.M. 28
Nivelet, J.C. 8
Niznik, Dr. Carol A. 9
Noble, Angela 22
Noble, Mrs. A. P. 28
Nolan, Troy C. 9
North, Richard C. 24
Nour, Nina 33

O
O'Brien, Michael 24
Ogasawara, Gary 35
Ogunfunmi, Dr. Tokunbo 36
Oh, Jung-Hyun 21
Oki, A.K. C1
Olson, Mark 6, 12
Opiekun, Deborah D. 4, 25
Osmundson, Dr. John C3
Ostrowski, John E. 37
Owens, Kevin C. 24

P
Paclik, John 18
Palty, Pat C2
Panchal, R. 15
Papademetriou, S. 10
Parekh, S. V. 7
Parikh, Manish R. 16
Park, Seon Ill 7
Park, So Ryoung 36
Park, YoungHo 14
Parker, Chris 11
Parks, Captain Robert S. C11
Parsons, Thomas A. 40
Paul, Jr., Grant 6
Paulraj, Arogyaswami 21, 22
Pawlowski, III, Colonel Thomas J. C3
Percival, D. John 16
Periard, James R. C6
Petitt, David G. 6
Pezzlo, John C5
Philipp, Johannes 1
Pinkey, Major Frank 11
Pinsky, Sylvan C19
Pitts Jr, Charles J. 35
Poirier, Peter M. C1
Pomalaza-Raez, Carlos 41
Poor, H. Vincent 9
Pouttu, Ari 9
Powers, Michael 27
Prescott, Glen E. C9
Prettie, Clifford W. 39
Prill, Robert S. 32
Procopio, Victor J. 39
Prowse, C. 2
Ptak, Mark C12
Pursley, Michael B. 15, 16, 22, 26
Putnam, Lieutenant Commander Dave C8

Q
Quintana, Richard 37
Qureshi, Aziz G. 31

R
Radcliffe, Captain Rodney A. C11
Rahikka, Douglas J. 30
Rahman, Shahid 17
Rainbolt, Bradley J. 22
Raines, Captain Richard A. 4, 12
Rajagopalan, Subhashini 18
Raju, Jyoti 12
Ramarao, Prashant 39
Ramaswamy, Sankar 25
Ramirez, Rafols 19
Rampton, Dr. Dennis C12
Rantowich, Nancy A. 24
Rao, Dr. B. Rama C15
Rao, Dr. Ramesh C17
Reed, Cheri 20
Reed, Irving S. 29
Reichert, Jurgen 36
Reiss, Amy C4
Reut, Anton B. C10
Rhoades, Doug 18
Richeson, Steve 17
Riechmann, Christian 12
Rivera, Brian 17
Roberts, John 16
Roberts, Steven W. 30
Robertson, R. Clark 8
Rodriquez, Brian C13
Roper, Commander Benjamin F. 24
Rossiter, Mark H. 31
Roussopoulos, N. 10
Rozanski, Grzegorz 40
Ruppe, Russell 34
Rush, Scott 6
Russell, Harlan B. 16

S
Saadawi, T. N. 13, 26
Sabin, Dr. Marc L. 24
Safer, Helmut 39
Saggio, Richard J. 38, C2

Author Index (cont)

Author and Session Number(s)

Sahoo, A. 19
Sandhu, Sumeet 21
Sandrin, William A. 16
Sankaranarayanan, S. 15
Sarto, Anthony C1
Saulnier, Gary J. 3, 9, 23
Sayegh, Soheil 25
Scalco, Richard C4
Schaffler, Keith 24
Schaffner, Captain Jake C11
Schaphorst, Richard A. 6
Schein, Bret 19
Schell, Stephen V. 29
Schiavoni, Maryanne T. 3
Schiffl, Robert 5
Schmidt, Hank 2
Scholtz, Robert A. 21, 34, 41
Scholz, Marcel L. 39
Schonhoff, Dr. Thomas C12
Schreyogg, Christoph 36
Schulz, Peter A. C9
Scorse, Jeffery A. C15
Scotty, Steve 24
Seate III, Robert C. 30
Seaton, Scott 34
Sebes, E. John C14
Secka, I. 10
Sehier, Phillippe 1, 9
Sethi, Adarshpal S. 19, 33, 39, 41
Shah, A. 29
Shah, Dr. Seyd C18
Shah, Dr. Syed A. 6
Shah, P. 33
Shake, Thomas H. C5
Sharret, Igal 34
Shaw, Lieutenant Commander James J. 31
Shea, Don 7
Shea, John M. 26
Sheet, Lenny 8
Sheha, Michael 11
Shen, Chien-Chung 5, 33
Shepherd, S. J. 37
Sherwin, Christopher M. 33
Shrimpton, Thomas E. 29
Sichert, Thomas C15
Sider, Ira 10
Siliato, John M. 35
Simcox, F. 6
Simpson, J.R. C1
Simpson, Jay R. 25
Simsa, Jan 36
Sinek, J. Ron C11
Singh, Dalip C13
Sklar, Bernard 1
Skormin, Victor A. C1
Sloan, Mark C6
Smith, David 35
Smith, Janice C8
Smith, Robert S. C5
Smith, Steven L. 11
Soderquist, Ingrid 10
Sohn, SangMok 14
Song, Iickho 7, 21, 23, 36
Sonnenberg, Jerry 40
Sparks, Craig A. C9
Spicer, J. A. 28
Spink, Brian C6
Squires, Ron C16
Sridhar, Suresh 3
Staba, Jay 32, 34
Stadler, Dr. J. Scott 19, C18
Stamm, David 11
Stark, Wayne E. 1, 3, 9, 23
Starsman, Lieutenant Commander R. Scott 27
Stathatos, K. 10
Stehle, Roy H. 18
Stein, Colonel Fred C6
Stell, Mark C17
Stentz, A.J. C1
Stentz, Andrew J. 25
Stepanek, James 24
Stephens, Donald R. 38
Stimson, Philip A. 39
Stowers, Joseph 12
Strater, Jay W. 5
Street, Michael D. 28
Streit, D.C. C1
Sun, Junping 33
Suphasindhu, N. 10
Swart, Bill C11
Sychaleun, David 2
Szuba, Krzysztof 35

T
Tabrizi, Siamak S. 31
Tamil, L. S. 28
Testard, M. 8
Testard, Marc 16
Thomas, Thomas L. 17
Thomas, Timothy A. 29
Thompson, Francis C12
Thuente I, Dr. David 5
Todd, Charlene 16
Tong, Lang 29
Torrieri, Don 17, 42
Toy, James 24
Tran, L.T. C1
Treichler, John C9
Tremont, Paul C6
Trippett, Matt C16
Trojanowski, Jeffrey S. C4
Troy, Bernard 25
Truong, Hieu 33
Tsai, Yukun 33
Tummala, Murali 40

U
Unkauf, Manfred C13
Upshur, J.I. C16
Uyar, M. Umit 19, 20
Uziel, Amir 40

V
Vaga, Tonis 34
Vakil, F. 33
Valex, Edward C13
Valletta, Anthony M. C7
Valluri, J. 10
Varshney, Dr. Prabodh 15
Varshney, Upkar 12, 41
Velez, Jaime 5
Vester, Walter C. 28
Vidano, Ron 32
Viswanathan, P. 33
Vitebskiy, Stan 40
Vivier, Guillaume 9
von der Embse, Urban C12
Voruganti, Ram 17, 18
Vuong, S. T. 2
Vuong, X. T. 2, 19, C9, C15

W
Wade, Robert 17
Wadsworth, Michael A. 28
Wahlen, Bruce E. 1
Walsh, Pat 34
Wang, Charles C. 1
Wang, Chia-Jiu 35
Wang, Xiadong 9
Watkins, John 24
Watt, Lieutenant Colonel Glenn 30
Weber, Robert A. C11
Weeks, Larry C15
Ween, Anthony 31
Welch, Thad B. 9
Wellborn, Robert 24
Wellington, Robert J. 17
Westby-Gibson, Doug 12
White, Captain Darius C8
White, Dr. David P. C10
White, Lieutenant Colonel Gregory B. C11
White, Lieutenant Colonel Ken C8
Whitehill, E. 39
Wieselthier, Jeffrey E. 41
Wight, James S. 36
Wilding, Jonathan 20
Wilkins, Clint S. 15
Williams, Max 13
Williams, Wes C6
Win, Moe Z. 15, 34
Wong, Tan F. 8
Wood, David B. 20
Woodall, Jerry C7
Wool, Jack C14
Wu, Tsong-Ho 33
Wysocarski, Jeffrey 16

X
Xie, H. 35
Xie, Hui 27
Xu, Zhengyu 27

Y
Yale, Wendel H. 20
Yamada, Art C12
Yang, JaeChan 14
Yang, Sheng Chih C16
Yao, Lei 29
Yoon, C. J. 39
Yoon, Seok Ho 23
Young, Ken C13
Yousesi, Esmail C12
Youssef, S. A. 13
Yu, Che-Fn 17

Z
Zaghloul, Dr. A.I. C16
Zakar, Joseph D. 30
Zander, Jens 10
Zavgren, Dr. John C17
Zbozny, Jennifer 39
Zeidler, J. 29
Zhang, Hongmin (Bob) 42
Zhang, Qi 29
Zhang, Qian 8
Zhao, Wei 20
Zhu, Dong 33
Zhu, Dongping (Daniel) 42
Ziegler, Commander Michael A. 31
Ziemer, Rodger E. 9
Zoltowski, Michael D. 23, 29
Zuk, William S. C5

Attendee Contacts

Name:

Organization:

Address:

Business phone:

Fax phone:

E-mail:

Notes:

Name:

Organization:

Address:

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Notes:

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Notes:

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